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REBUILT AND REMADE: THE FLORIDA CITRUS INDUSTRY, 1909-1939

by

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B.A. Florida State University, 2012

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Arts
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ABSTRACT

Prior to orange juice concentrate, Florida citrus was already an industrialized agricultural sector. This thesis explores the early-20th-century Florida citrus industry and demonstrates that contemporary farming practices were influential in advancing how citrus was produced, processed, worked, marketed, and regulated in early-20th-century Florida. Restarted after devastating freezes in 1894-1895, resolute Florida growers rebuilt their groves into marvels of large-scale citrus fruit production. Continuing a legacy in experimental crossbreeding, improved varieties of citrus were developed to lengthen the season and markets. Advocated by nurserymen and university educators, biological innovation helped the citrus thrive in the 1910s and 1920s from adverse weather effects, pests, and diseases. Scientists were agents of modernization whose research influenced its industrialization. With the inclusion of machines in the processing of citrus, technological innovation materialized significantly in Florida's packinghouses by the 1930s. These changes affected the lives of agricultural workers and small growers. Whether by prejudice or by resisting collective efforts, big growers gained power and influence in the industry. Their power concentrated into the Florida Citrus Codes and Florida Citrus Commission in 1935, which effectively allowed large-scale growers to direct the industry's development into the rest of the 20th century. In all, this reexamination into Florida citrus exemplifies the remaking of this industry into a modern agricultural system as well as the gradualism of southern agricultural modernization in early-20th-century America.

To my family

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CHAPTER ONE: INTRODUCTION

In “a pageant depicting the important events in Florida citrus” performed at the 1937 semi-centennial celebration of the Florida State Horticultural Society at Silver Springs, the “Spirit of Florida” along with a “Masculine” and “Feminine Reader” summoned the spirits of those who brought the state of Florida “honor and glory” to retell the history of the “ruddy living gold” that is the orange, “that golden apple that was destined to write into Florida’s future ‘pictures of silver.’” In the first two episodes of the pageant, the Spaniards introduced the fruit to St. Augustine and natives sowed orange seeds throughout the surrounding lands in the 16th century. In episodes three through five, particular individuals were remembered for influencing citrus’ promulgation throughout Florida: Dr. Odet Phillipe, the nephew of a French king who brought grapefruit to what is now Tampa in 1823, Dr. Henry Perrine, the “brave little doctor” who introduced to Florida’s eastern coast more citrus like citrons and limes but died “a martyr” and “a hero of horticulture” from Indian attack in 1840, and Parson Brown, the preacher who received from a mysterious traveler in 1875 seedlings “grown from an orange obtained from a strange ship in port at Savannah after sailing the seven seas” that produced his namesake Parson Brown oranges, “the pioneer early orange of Florida.”¹

But after episode six, the part of the play that praised the founding of the Florida State Horticultural Society in 1888, the pageant turned to “a tragic chapter written with icy fingers.” The “Big Freeze” of 1894-1895 blighted the high hopes for citrus in Florida. Killing most of the state’s mature groves with its frosty air, this freeze made “women cry,” men “stunned and sad,

¹ Nina Oliver Dean, “Golden Harvest: The Romance of the Florida Citrus,” presented at Semi-Centennial celebration of the Florida State Horticultural Society in Silver Springs, Ocala, Florida, April 14, 1937, 3-10. Citrus Brochure Collection, Winter Garden Heritage Foundation, Winter Garden, Florida.

gather their coats” and most involved with citrus farming leave their Florida homes indefinitely. They were “destroyed financially” and believed that the citrus industry was lost forever. But as the Spirit of Florida watched “the Spirit of Citrus” and “the Spirit of Frost” dance in “a Harlequin Columbine duet,” with Frost pursuing and Citrus half beckoning, half fleeing, but finally surrendering to the embrace of the triumphant Frost, the Masculine Reader proclaimed, “but there were those who would not know defeat, who stayed and fought against overwhelming odds with the high heroism that saved the future of citrus.”² These persistent growers who decided to stay in Florida and revive their groves after this freeze not only rescued Florida citrus, but their actions paved the way for its prosperous future.

This work focuses on the efforts of these men and women. It reexamines the history of citrus farming in early-20th-century Florida to see how the citrus industry recovered and was rebuilt from the 1894-1895 freeze. But this work also argues that the actions and ideas of these individuals not only rebuilt the Florida citrus industry; they remade it into a modern agricultural system. Between 1909 and into the late 1930s, citrus farming in Florida transformed from a potentially profitable endeavor for investors, entrepreneurs, and small farm families in the late 19th century into a multi-million-dollar, large-scale agricultural industry in the United States by the mid-20th century. Like other farms throughout America, scientifically-driven improvements, mechanization, labor specialization, market standardization, and more involved government regulation initiated the modernization of the Florida citrus industry in the early 20th century.

Historians have researched and written extensively on the development or modernization of farms into highly-capitalized agribusinesses, and this work places the history of the Florida

² Ibid, 10-15.

citrus history into such narratives. In *Born in the Country*, his general history on rural America, David B. Danbom writes that farmers nationwide became more commercial in character by WWI. Their growing market involvement was frequently accompanied by a greater appreciation for science, increasing technological sophistication, and a determination to behave in accordance with sound business principles. Farmers were also financially stringent in their operations; the post-war market slumps in the 1920s followed by the overall economic depression of the country in the 1930s meant that farms had to be operated like frugal businesses. These ideas combined with economic realities to make the structure of American agriculture assume a more modern shape. However, the number of farms and farmers declined in these decades, for small to middle-sized producers were squeezed out by increasing costs to run profitably and swallowed up by large, corporatized farms. By the late-1930s, the future of farming in America already seemed to belong to large, highly-mechanized, and highly-capitalized producers.³ In her study on Montana's wheat fields and bonanza farms, Deborah Fitzgerald notes that new industrial production systems, epitomized by modern mass production factories, boardrooms, linked capital, raw materials, transportation networks, communication systems, and trained technical experts, helped industrial logic emerge in American agriculture. Although technology, legislation, and available or disappearing credit opportunities are all key to understanding change in farms, an overarching logic of change took place in bits and pieces. Industrial systems were constructed in the country's rural areas.⁴

³ David B. Danbom, *Born in the Country: A History of Rural America* (Baltimore: Johns Hopkins University Press, 2006), 184, 187.

⁴ Deborah Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven: Yale University Press, 2003), 3-4.

This modernizing, industrializing change on farms not only occurred in every part of the country; it is just one of many changes taking place in American society throughout the early 20th century. While the Florida citrus industry benefitted from an increase in consumers of fresh produce before WWI, the war itself skyrocketed demand for American crops. However, especially for the Florida citrus industry, no other era has held such a concentration of the flippant, the futile, the tragic, and the heroic like the 1920s and 1930s. As America's economy, society, and culture transformed and reacted in these tumultuous decades, no section of the country felt the hard decline of the farm more than the predominantly rural South. The region for the most part was one of the last to modernize, home to an agrarian class made up by possibly the poorest workers in America, sharecroppers and tenants.⁵ Though most of that state's citizens lived in rural areas until the 1930s, Florida was atypical to its neighboring southern states with its growth of fruit and vegetable cash crops.⁶ Booms and busts from the promise of cash crops and real estate, plus the depletion of the naval stores that characterized Florida's industry in early-20th-century, brought their own share of economic trouble into this southern state.⁷ Nonetheless through mechanization and government policy, Pete Daniel notes that, despite peculiarities in reaction, even the three big rural cultures in southern agriculture (cotton, rice, and tobacco farming) became part of the encompassing movement to substitute machines and capital for labor in all segments of America's economy during the early 20th century.⁸ In a world driven by

⁵ Glen Jeansonne, *Transformation and Reaction: America 1921-1945* (Long Grove, Illinois: Waveland Press, 1994), 12-14.

⁶ Raymond Arsenault and Gary R. Mormino, "From Dixie to Dreamland: Demographic and Cultural Change in Florida, 1880-1980," in *Shades of the Sunbelt: Essays on Ethnicity, Race, and the Urban South* edited by Randall M. Miller and George E. Pozetta (Westport, CT: Greenwood Press, 1988), 166.

⁷ Gary R. Mormino, *Land of sunshine, state of dreams: a social history of modern Florida* (Gainesville: University Press of Florida, 2005), 187-188.

⁸ Pete Daniel, *Breaking the Land: The Transformation of Cotton, Tobacco, and Rice Cultures since 1880* (Urbana: University of Illinois Press, 1985), xi.

science, chemicals, technology, and mechanization, Daniel says that change was inevitable, but government policies, not the predestination associated with scientific advancement, shaped agriculture and the lives of millions in the 20th-century United States and the rural South.⁹

David Kennedy concurs but mentions other contributing factors to agricultural change. Noting that the relative importance of agriculture in the American economy and the relative size of the farm work force had been shrinking before the Depression arrived, global competition, mechanization, increasing agricultural productivity, and industrial growth underwrote the capitalization of farms as well as a country-to-city migration happening throughout the early 20th century.¹⁰

Tracing the modernization of American citrus industries, historians have looked more at California than Florida. The most impressive of such works is Douglas C. Sackman's *Orange Empire*, a study that highlights the immense scientific ingenuity, environmental reconstruction, advertising campaigns, and subjugation of labor done by growers and business affiliates of the California Fruit Growers Exchange in from the late-19th to mid-20th century.¹¹ Richard C. Sawyer further expounds on the scientific research happening in California's citrus groves in *To Make a Spotless Orange*, which stresses the successes entomologists had in battling citrus pests and diseases with natural enemies instead of chemicals.¹² As for studies specifically focused on Florida citrus, two dissertations have looked at the industry's development before 1895. Jerry

⁹ Pete Daniel, "Not Predestination: The Rural South and Twentieth-Century Transformation," in *The American South in the Twentieth Century*, edited by Craig S. Pascoe, Karen Trahan Leathem, and Andy Ambrose (Athens: University of Georgia Press, 2005), 92.

¹⁰ David Kennedy, *Freedom from Fear: The American People in Depression and War, 1929-1945* (New York: Oxford University Press, 1999), 201.

¹¹ Douglas Cauzaux Sackman, *Orange Empire: California and the Fruits of Eden* (Berkeley: University of California Press, 2005).

¹² Richard C. Sawyer, *To Make a Spotless Orange: Biological Control in California* (Ames: Iowa State University Press, 1996).

Woods Weeks demonstrates how pioneer Florida growers established commercial nurseries for trees, disseminated information through early agricultural journals, used trial-and-error for new varieties or cultivation techniques, and began to apply scientific research to help the fledgling enterprise become a successful cash-crop.¹³ Mark Howard Long examines the contributions of Henry Sanford to the development of the Florida citrus industry, describing Sanford's establishment of the country's first experiment station for citrus (Belair) as well as his struggles to operate a profitable citrus enterprise within the South's last frontier.¹⁴

A shared viewpoint among scholars on Florida citrus is that the advent of frozen orange juice concentrate in 1948 was the most significant factor in the modernization of the industry. To Gary Mormino, the most powerful symbol and salvation of the citrus industry was a small can of frozen orange concentrate. It revolutionized the planting and processing of citrus, the distribution and marketing of Florida oranges, and changes in consumption and taste.¹⁵ Shane Hamilton also recognized concentrate as a miracle product for the industry. Due to popularity and constant demand for what became America's breakfast drink of choice, frozen orange juice concentrate allowed Florida citrus growers to easily get rid of surplus and hope for occasional freezes to drop production and spike prices for oranges.¹⁶

Though frozen orange juice concentrate radically changed the cultivation and preparation of Florida citrus fruits, to say that its invention was what modernized the industry overlooks the

¹³ Jerry Woods Weeks, "Florida Gold: The Emergence of the Florida Citrus Industry, 1865-1895," (PhD Dissertation, The University of North Carolina at Chapel Hill, 1977).

¹⁴ Mark Howard Long, "Cultivating a new order: Reconstructing Florida's postbellum frontier," (PhD Dissertation, Loyola University of Chicago, 2007).

¹⁵ Mormino, *Land of sunshine, state of dreams*, 197, 199.

¹⁶ Shane Hamilton, "Cold Capitalism: The Political Ecology of Frozen Concentrated Orange Juice," *Agricultural History* 77, No. 4 (Autumn 2003); 557-581.

revolutionary changes that took place in the early 20th century. Modernization took place before concentrate. Just a few decades prior, horticulturalists, pomologists, bacteriologists, and entomologists studied the biology of citrus trees and organisms that affected the groves. Before engineers created machines to chemically alter orange juice, they invented machines that cleaned and sorted whole fruits and utilized chemicals to grow quality, marketable citrus fruits and protect them from natural enemies. Long before Minute Maid was even thought of, Florida citrus growers enjoyed the marketing and advertising of their fruits throughout the country. The rapid rise of cities in the Northeast and Midwest gave growers massive populaces with voracious appetites for fresh fruits and vegetables to sell their perishable products to, and the development of the refrigerated railroad car in the late 1800s along with the spreading of train tracks all through Florida added more impetus for them to grow as much citrus as possible.

With this significant increase in fruit production corresponded scientific and technological adaptations that allowed growers to produce record-breaking numbers of fruit in the first place. This unprecedented growth in a state's agricultural industry is evident in United States agricultural censuses. After just 273,295 crates of oranges were produced in 1900, Florida made 4,852,957 crates of oranges in the 1910 census. By 1920, production increased 22.2 percent with over a million more crates, bringing the total to 5,930,422.¹⁷ By the 1930 census, Florida improved 63 percent on orange production with the making 9,720,998 crates, but just five years later, 21,067,984 crates of oranges were grown in the sunshine state, well over double

¹⁷ Bureau of the Census, US Department of Commerce, *Fourteenth Census of the United States Taken In The Year 1920*, Volume V, Agriculture (Washington, D.C.: Government Printing Office, 1922), 872.

the prior census with a 116 percent increase in production.¹⁸ By 1940, 26,333,139 crates of oranges were produced in Florida, a 24 percent increase from 1935 but a fivefold accumulation from 1910. Grapefruit production increased fourteenfold in Florida from 1910. Starting at 1,061,537 crates, grapefruit shipments culminated to 14,455,740 crates by 1940. The 1930s alone expanded grapefruit production threefold, and other citrus fruits like tangerines, lemons, particularly limes, doubled in yield over this decade.¹⁹

Though these burgeoning figures show a definite increase in Florida's fruit production, numbers cannot thoroughly demonstrate the impact that scientific thought and mechanization had on the state's early-20th-century citrus industry. The first chapter deals with its scientific developments in its early modern era, particularly the influence scientists had in shaping knowledge and practices that bettered the industry's operations. To show the implications science had in understanding citrus, it introduces the first authoritative work on citriculture, which was researched, written, and published in Florida by horticulturist H. Harold Hume. This chapter also exhibits how experimentation in privately-owned nurseries brought about not only new, improved kinds of citrus but also created the first standardization of orange varieties in the industry. Selecting the most outstanding varieties respective to their maturation in the season, work at nurseries improved Florida's citrus seasons by lengthening its time with multiple varieties of citrus fruit. Scientists like Hume helped expand the role of universities in the industry's development. Through experimentation and education, scientists directly shaped the

¹⁸ Bureau of the Census, US Department of Commerce, *United States Census of 1935: Agriculture*, Volume 1, Part 29 (Washington, D.C., Government Printing Office, 1936), 555.

¹⁹ Bureau of the Census, U.S. Department of Commerce, *Sixteenth Annual Census of the United States, Agriculture*, Vol. 1, Part 29 (Washington D.C.: Government Printing Office, 1941), 693.

policies, development, and overall understanding of Florida citrus farming in the early-20th-century.

The second chapter views technological advancement. By discussing Lee Bronson Skinner, a Dunedin citrus grower responsible for incorporating the largest manufacturer of citrus machinery in the world in 1909, the L.B. Skinner Machinery Company, this chapter shows how mechanization, while leading to little change in harvesting citrus, led to the full scale factorization of citrus packinghouses by the 1920s. Skinner's company and inventions revolutionized citrus farming worldwide not by being the first to invent certain machines for cleaning and processing fruits but by being the first to mass-manufacture machines that can be used by growers and packers abroad. Skinner represents a career path atypical to his fellow Florida growers; he backed out of investing in fruit production and put his capital into machine production. His venture proved lucrative for himself and influential to the Florida citrus industry, causing packinghouses statewide to accommodate their space and floorplan to install Skinner's machines. A grower-turned-industrialist, Skinner's entrepreneurial spirit is a direct challenge to early-20th-century ideas of southern agricultural development, which based success in continuing traditional farming practices and a large agricultural labor force. His machinery discussed in this chapter greatly affected the conceptualization of citrus packinghouses in Florida. A few of these facilities are examined to show that by the 1920s, packinghouses that were once just barns became factories for fruit; constituting complexes built with utilitarian architectural details that used assembly lines to manufacture oranges for market like Ford Model-T's.

But science and technology alone cannot define modernization. While these beginning chapters exhibit modernization unimpeded, the latter three chapters demonstrate modernization is not only constructed but also confronted. History shows that progress is never embraced by all. In the modernization of the Florida citrus industry, labor specialization, market standardization, and government regulation were slower in adoption by growers. In the only other historical research article that focuses on early-20th-century Florida citrus development, Scott Hussey describes the various troubles the industry faced as it progressed in the era. Contending that the establishment of state-sponsored organizations heralded much-needed collective agreement between growers and government officials, Hussey believes that the Florida Citrus Commission and Florida Department of Citrus, both founded in 1935, stabilized the citrus industry enough to better capitalize on the advent of frozen orange juice concentrate. But prior to the founding of these organizations, Hussey recounts the problems that troubled the Florida citrus industry. Plagued by overproduction, saturated markets, daunting natural enemies like Mediterranean fruit flies and freezes, plus the Great Depression and infighting amongst growers, the industry was in dire straits during much of the early 20th century. To Hussey, cooperation through the creation of state-sanctioned commissions was the saving grace of the industry, for it was far too disorganized to efficiently operate against the era's economic downturns and environmental disasters.²⁰

Though he does a sufficient job in describing the challenges that the early modern Florida citrus industry faced, Hussey fails to explain why such disorganization was widespread among the industry's constituents. He concludes that too much independence was the culprit for

²⁰ Scott Hussey, "Freezes, Fights, and Fancy: The Formation of Agricultural Cooperatives in the Florida Citrus Industry," *Florida Historical Quarterly* 89, no. 1 (Summer 2010): 81-105.

disharmony in this agricultural industry rather than the possibility of bigger forces being at play. This thesis questions this interpretation by determining the powers that drove conflict within early-20th-century Florida citrus. By looking at the all sides involved in the advancement, resistance, or complete opposition to a modernizing change in the industry, one can see who has power in a situation and how such power was utilized to promote or obstruct the substantiation of new ideas.

The third chapter deals with a topic not covered in Hussey's article, labor in early-20th-century Florida citrus. Though labor unions existed in some agricultural fields, the Florida citrus industry, like crop cultures in other southern states, was not one of them. Early-20th-century white Floridians feared labor unions, communists, and blacks, and these views carried over to the citrus groves. This chapter starts with labor specialization, describing jobs in industrializing Florida citrus packinghouses. They were at first places where industrial progress did not mean racial progress; places not commonly shared between white and African Americans workers. For blacks, labor specialization stopped in the groves, where they were the preferred force of growers to do the menial tasks of picking fruits. African-Americans working citrus in Florida dealt with overt white authority and Jim Crow segregation that limited their opportunities to work and live in certain areas of Florida. But though unions crumbled to counterattacks from the KKK and other representations of white authority, blacks were not completely subordinate to Florida's racialized government and society. Blacks protected themselves by forming their own distinct communities, operating independently from direct control by whites in neighboring towns. The contributions of independent African-American communities and individuals to the Florida citrus industry are highlighted in the labor discussion. Identifying individuals who managed and

controlled their own citrus groves, this chapter plants African-Americans into the greater Florida citrus narrative. Stories and documents pertaining to Ella Wall of Apopka and Prince Butler Boston of Oviedo not only help save such African-American citrus operations from being forgotten; they also correct history by showing who is responsible for some of the industry's most prolific inventions.

In chapter four, the focus is on cooperatives, a modernizing force for farms throughout the country. Cooperatives are analyzed to illuminate the powers that represented and resisted their operation. The most famous citrus cooperative, the California Fruit Growers' Exchange, made millions in citrus sales by the 1890s and set the tone for fresh-fruit marketing and advertising. With an eye always looking at what their western rival was doing, Florida growers envied the popularity of California's Sunkist and, after touring their rival citrus state's operations, set to make their own brand for Florida citrus products. After charting the evolution of the cooperative idea and looking at the establishment and growth of the Florida Citrus Exchange since 1909, this chapter argues that the Exchange's authority in the state's industry is tenuous at best by the 1920s. "Disorganized individualists" were not to blame for this tension, for growers were far from disorganized.²¹ Many organized into local sub-exchanges under the Florida Citrus Exchange in hopes that a mass-cooperative effort among the state's citrus growers would produce more profit, but some private corporatized citrus businesses had fair reason to resist what they saw as unbeneficial to their profit-making. Businessmen like Sydney Chase and Joshua Chase, co-owners to one of Florida's largest privately-owned citrus businesses, doubted the marketing and advertising capabilities of the Florida Citrus Exchange. Throughout the 1920s,

²¹ Hussey, "Freeze, Fights, and Fancy," 91.

the Chases actively competed against this cooperative, and their opposition to joining the Exchange highlights the capability that larger growers had in complicating the statewide operation of the Florida citrus industry. Promoting themselves as superior sellers of citrus over the Exchange, Chase & Company undermined the abilities of smaller citrus farmers to level the playing field through more cooperative control of the industry. Instead of cooperating with such small farmers, big growers and businessmen would rather employ them within their own operations. Thanks to economic depression in the 1930s, the bigger farms bought out and consolidated the smaller citrus farms into their companies, but as this chapter shows, they were already large enough to disrupt industry-wide trends by the 1920s.

This power apparent in big citrus growers gave them a stronger say politically in the Florida citrus industry by the 1930s. Like other farmers throughout the South, Florida growers at first desired more government oversight in regulation and standardization to better control the quality and reputation of Florida citrus fruits going to markets. Innately though, growers were also reticent about allowing politicians to have too much dictation in citrus industry activities. The fifth chapter examines this relationship by looking at the work of Nathan Mayo in directing key affairs in Florida citrus during the early part of his storied tenure as Florida's fifth Commissioner of Agriculture. One of the most powerful members in many governors' cabinets, Mayo was actually more of a follower than a leader in the modernization of state's citrus industry. Because inspection was the foremost function of the Florida Department of Agriculture, citrus fruit inspection was an important but crucial responsibility for Commissioner Mayo. His inspections of citrus involved him in political battles with growers throughout the 1920s that hurt their trust in his policies concerning the citrus industry. Angry over Mayo's handling of citrus

regulation enforcement, some growers bankrolled Mayo's opposition when he ran unsuccessfully for other political offices. He was later limited in his power in the industry by state legislation by the mid-1930s. The passage of new laws created a new governor-appointed organization of big growers that enforced and created Florida citrus regulations, the Florida Citrus Commission. By analyzing the language of these laws, it is noticeable that Mayo's influence over the citrus industry dwindled considerably in statewide citrus regulation. Some of Florida's largest growers headed the Florida Citrus Commission, a sure sign of large-scale agricultural interests taking the reins that directed the industry's future. In all, power was taken away from people who challenged the interests of Florida's big citrus barons. Once advertised as a new land of opportunity for small farmers and a possible embodiment of the Jeffersonian republic, citrus' modernization helped turned Florida into a place of large-scale, modern, agricultural enterprise. Even before concentrate, highly-capitalized citrus growers shifted power within Florida citrus to favor corporate agribusinesses but push smalltime independent growers into the industry's periphery.

This is a deeper look into the early modern Florida citrus industry. Rebuilt from the Great Freeze by 1909, when pre-freeze production returned, Florida citrus cultivation gradually transitioned from the work of many family farms into an industry controlled by fewer and fewer people. By the mid-20th century, a few dozen firms dominated the whole state's citrus production. But Florida citrus was on this path toward modernization and industrialization long before the appearance of Minute Maid or Tropicana. In the early decades of the 20th century, the modern Florida citrus industry was already born.

CHAPTER TWO: SCIENCE

In *Every Farm a Factory*, Deborah Fitzgerald analyzed how financiers and business owners promoted industrialization in 19th-century and early-20th-century America. Once made by artisans, goods like clothing, shoes, metal, and other crafts gradually industrialized to fit the economic interests of producers who wanted to generate more goods for more money, who invested their capital in technology for more efficiency in production, and who industrialized not only to make more goods but to control the artisanal labor in the production process. Some crafts such as textiles and firearms industrialized rapidly, but agriculture industrialized more slowly. In the mid-1890s, when factories, railroads, financial institutions, cities, and the government were subjected to modernizing, rationalizing principles, agriculture, so essential to the nation's health, was much as it had been one hundred years earlier.²²

In the early 20th century, new professional researchers educated at land-grant universities that brought science and industry into Florida citrus groves. These professionals were the first generation of college-educated agricultural experts in America, trained to be analysts and evaluators of farmers and their farms.²³ This chapter argues that scientists' research and insight helped industrialize Florida citrus farming in the early 20th century. Studying the biological features of citrus trees, scientists not only tried to classify citrus but determined the conditions that allowed citrus to thrive and make the best fruit. By the 1920s, scientific understanding spread through citriculture in Florida, at a time when industrial ideals were actively implemented in American farming. Scientists were not only influential in communicating the knowledge

²²Deborah Fitzgerald, *Every Farm a Factory: The Industrial Ideal in American Agriculture* (New Haven: Yale University Press, 2003), 21-24, 27-28.

²³ *Ibid.*

behind citrus farming through scientific experimentation and understanding, they were also influential in communicating their ideas of public policy for Florida's agricultural development in the early-20th-century. The accomplishments of H. Harold Hume are examined to reveal scientists' wide-ranging influence in helping develop the Florida citrus industry into a modern agricultural system.

Scientific work and accomplishments in the 20th century built upon the lessons learned through the experiences of 19th-century growers. Jerry Woods Weeks noted that Florida citrus culture reflected an acquisition of knowledge over time. The "tuition of experience" gained by Florida growers over middle and late 19th century diminished the ill effects of ignorance in the industry. A body of scientific knowledge substantiated in this era guided growers in their future efforts. Indeed, the publications on agriculture in Florida were fundamental to the dissemination of grove experiences and scientific knowledge. The establishment of the Florida State Horticultural Society in 1888 provided another quasi-professional base for citrus culture in the state to build from. Efforts made in cultivation techniques and citrus variety introduction were the most important advancements in this era.²⁴ In addition to learning ways to defend their groves from insects and diseases, growers developed better citrus fruits and citrus fruit varieties. They grew and propagated trees that bore more, bigger, and juicier fruit by the 19th century's turn.

This improvement in the cultivation of Florida citrus varieties was biological innovation in action. In a study on antebellum cotton, Alan Olmstead and Paul Rhode argued that biological

²⁴ Jerry Woods Weeks, *Florida Gold: The Emergence of the Florida Citrus Industry, 1865-1895* (PhD Dissertation: The University of North Carolina at Chapel Hill, 1977), 228, 230.

innovation fulfilled a number of needs in cotton production that ranged from disease resistance to speed in harvesting while also providing the spinning industry with a superior fiber that resisted breaking.²⁵ Biological innovation enhanced the kinds and yields of wheat, corn, cotton, and tobacco, and citrus.²⁶ It helped expand the Florida citrus industry to new heights by the opening of the 20th century. Whereas antebellum farmers looked to planters to undertake the experiments that produced biological innovation, Florida citrus growers of the late 19th and early 20th centuries relied on the fellow growers, nurseries, and the experiment station associated with the land grant university.

Biological innovation often was the product of trial-and-error processes and emulation by growers, not the direct product of scientific methods, in 19th-century Florida. Because the Florida citrus industry lacked organization and uniformity in the 1800s, totally different methods of citrus cultivation existed between groves only a few miles apart. Misinformation on the assumed ease of growing citrus was published in 1870s promotional tracts, and this led to many failed groves in Florida. It also caused growers to avoid books for information and develop personal practices and firsthand knowledge for citriculture. Growers tried to mimic the cultivation practices of successful growers at the time, but variations in elevation, soil, and climate between grove locations led to a myriad of results.²⁷ Still, biological innovation occurred despite these circumstances. New techniques were implemented in the groves to improve the fruit and harvest quantity of citrus trees. Biological innovation produced improved citrus varieties and laid the foundations for a flourishing commercial citrus industry.

²⁵ Alan L. Olmstead and Paul L. Rhode, *Creating Abundance: Biological Innovation and American Agricultural Development* (New York: Cambridge University Press, 2008), 401.

²⁶ *Ibid.*, 2-3.

²⁷ Weeks, *Florida Gold*, 56-57.

Florida's first commercial citrus groves were planted at points easily reached by water transportation. In the 19th century, groves were established along the Atlantic Coast near St. Augustine and New Smyrna, along the Indian River near Cocoa, and along the St. Johns River from Jacksonville and Mandarin to Palatka and Sanford. Some early groves established in counties along the Gulf Coast, although after 1895, Florida citrus moved south. The industry reemerged commercially throughout Central Florida in the early 1900s. Thanks to newly-constructed railroads, citrus could be transported easily from the central and southern portions of Florida, allowing the industry to expand into previously inaccessible areas. By the 1920s, the greatest proportion of Florida's citrus was produced extensively inland in Marion, Lake, Volusia, Orange, Polk, and DeSoto counties. It was also cultivated along the Gulf Coast in Pinellas and Hillsborough counties and along the Atlantic Coast, especially the Indian River, in Brevard and Saint Lucie counties.²⁸

Before this shift southward by the industry, Florida citrus growers implemented new cultivation techniques. One of the most significant techniques was "topworking" citrus trees, which meant attaching newer growth to older trees. The beginning of commercial citrus farming was marked by the planting of seedlings, which meant that land had to be completely cleared, plowed, and picked of roots before a citrus grove could be established. Seedlings groves produced abundant fruit, and prospering seedlings were selected by growers to breed into new varieties. However, seedlings take 5-7 years to mature before they produce fruit, and in that time, adverse weather, pests, or disease could injure or kill the young and vulnerable trees.

Topworking reduced the time for a grove to mature and hastened experiments with new varieties.

²⁸ H. Harold Hume, *The Cultivation of Citrus Fruits* (New York: MacMillan, 1926), 7-8.

When a tree is topworked, a young branch is removed from one tree and budded or grafted onto another tree's branches or trunk. Instead of 5-7 years, it took to 2-3 years for a tree to produce fruit. The branch topworked into a tree is referred to as a "bud," which is usually a foot-long section of a newly-grown branch cut from a tree that is at least 3 years old. Growers preferred obtaining new buds from trees in September and October, when the bud is dormant and does not grow until the following spring. Buds can be attached directly onto another tree by budding, which is inserting the bud into cuts made in a branch or the trunk and tied in place until fused, or they can also be grafted directly into the clear-cut stump of a tree. Topworking also allows growers to repair or completely redo groves without having to clear the land and start from scratch. Whether their trees became damaged by pests and adverse weather, or they bore underperforming citrus fruits, growers can replace their whole grove with another kind of citrus fruit without having to remove all their citrus trees. Citrus, particularly orange trees, can support and produce the respected fruit from buds deriving from any other species of citrus. Lemons, grapefruits, satsumas, and kumquats can be grown from orange trees. Because of this interchangeability, topworking allowed growers to experiment and determine what combinations of trees and buds grew vigorously and yielded excellent fruit. In fact, most citrus trees grown in Florida have a trunk or "rootstock" that differs completely in kind from the top or "scion" of the tree.²⁹

Progress with topworking coincided with the discovery and development of new citrus varieties in the 19th century. Variety refers to a breed or subspecies within a citrus species.

²⁹ Hume, *The Cultivation of Citrus Fruits*, 159-160, 195-198; Christian Warren, "Nature's Navels: An Overview of the Many Environmental Histories of Florida Citrus," in *Paradise Lost?: The Environmental History of Florida*, edited by Jack E. Davis and Raymond Arsenault (Gainesville: University Press of Florida, 2005), 180; John McPhee, *Oranges* (Farrar, Strauss, and Giroux, 1967), 22.

Varieties have been propagated from one parent individual or from the branch of an individual by asexual methods like budding and grafting. A variety can be natural in origin or be a cultivar, meaning that it was produced in cultivation by selective breeding. Each variety within a citrus species has permanent, heritable characteristics that make them unique from the rest of their kind.

Chance, not design, first governed the development of citrus varieties in Florida. In the 19th century, individuals who undertook citrus cultivation were unaware of citrus varieties. They categorized citrus by their obvious differences. To pioneer growers, citrus was divided into sweet oranges, sour oranges, lemons, limes, grapefruit (pomelo), and Mandarin oranges (tangerines). There was general lack of awareness for select varieties within a citrus species in the early Florida citrus industry. This lack of awareness, combined with an absence of nurseries, increasing demand for sweet orange trees, and limited knowledge of budding interacted to minimize the utilization of designated varieties. Initially, a random pattern of variety development occurred in Florida citrus.³⁰ Most early growers were concerned primarily with acquiring sweet orange stock, not select varieties. A persistent shortage of sweet orange trees that coincided with an increasing demand for sweet oranges discouraged selectivity with varieties, but the shortage of sweet orange seedlings forced growers to obtain sweet orange budwood and fuse them onto other citrus rootstocks of lemons and sour oranges.³¹ The increased utilization of budding to acquire and perpetuate sweet oranges marked a transition from a reliance on sweet oranges to an interest in select varieties. Florida citrus growers increasingly employed buds from superior seedlings to produce fruit with desired qualities and to establish uniformity in their

³⁰ Weeks, *Florida Gold*, 124.

³¹ *Ibid*, 126.

groves.³² These budded progenies from select trees were the first to be designated as distinct varieties by citrus growers. Importation of foreign citrus seedlings and budwood by both individuals and the United States Department of Agriculture led to the making of numerous orange, grapefruit, and other citrus fruit varieties by the 20th century.³³

The development of citrus varieties gave growers plenty of choices but also made it more challenging to decide which variety would grow and perform the best in their groves. But as the industry recovered from the 1894-1895 freezes, Florida growers had a better idea of what varieties were most dependable and lucrative in commercial citrus farming. Perhaps most importantly, they also determined how to plant citrus fruit varieties in accordance to the times of year they were mature enough for harvest. For example, by planting several varieties of oranges, growers extended their harvest time and were able to make their groves more profitable. Though peak orange season fell between December and early March, planting a few varieties extended the citrus picking season of growers for up to eight or nine months, from September to May. The creation and utilization of selected varieties allowed the Florida citrus industry to expand the overall production of citrus fruits in a single growing season.

Certain citrus varieties thrive in specific locales. By the 20th century, Florida citrus growers knew what citrus varieties grew best in their state's sub-tropical climate. For instance, some orange varieties developed in 19th-century Florida became excellent competitors to the Bahia or Washington Navel orange. An orange variety that grew far better in California than in

³² Ibid, 131-132

³³ Ibid, 132-136.

Florida, the Washington Navel was shipped to markets from December to February.³⁴ Three varieties were developed in Florida that helped the sunshine state compete with California's Washington Navel. These varieties were the Parson Brown, the Pineapple, and the Hamlin. Coarse-grained in skin, yellow in flesh, and abundant in juice, the Parson Brown originated in the mid-1800s in the seedling grove of Parson Nathan L. Brown, a clergyman in Webster who grew oranges to supplement his church income. Captain J.L. Carney of Lake Weir in Marion County formally introduced the Parson Brown to the industry in 1878, which became a popular early-season variety in Florida that was harvested from October to November.³⁵ The Pineapple orange also originated Florida, near Citra in the grove of James B. Owens. Supposedly the product from the budding of a Parson Brown to sour orange rootstock, it gets its name for its fancied resemblance in flavor to a pineapple. The Pineapple orange became the state's most important mid-season orange by the 20th century, harvested between January and February. Though seedy and weak-skinned, the Pineapple orange's heavy aroma, bright orange color, smooth texture, and rich juice made it exquisite to the eye and the taste buds.³⁶ The Hamlin orange originated from the groves planted in 1879 by Isaac Stone near Glenwood, Florida. The grove was later bought by the namesake of this variety, A.G. Hamlin of Deland, who discovered this attractive early-season orange that ripened in October. Known for its deep orange color, the Hamlin was considered to have the smoothest skin of any sweet orange.³⁷

³⁴ Hume, *The Cultivation of Citrus Fruits*, 71-72.

³⁵ Hume, *The Cultivation of Citrus Fruits*, 61-62. For more on Parson Brown, see Mercer Brown, *History of Parson Brown orange* (Typescript), Vertical File Miscellaneous Manuscript Collection, Florida Historical Society, Cocoa, Florida.

³⁶ Hume, *The Cultivation of Citrus Fruits*, 66-67; "Pineapple sweet orange," University of California-Riverside Citrus Variety Collection. <http://www.citrusvariety.ucr.edu/citrus/pineapple.html>. [accessed March 21, 2018].

³⁷ Hume, *The Cultivation of Citrus Fruits*, 64; McPhee, *Oranges*, 15.

For the later part of the citrus season, Florida growers turned to a variety that became the only orange variety grown in the state and arguably the most commercially grown orange in the world. This variety was the Valencia, which has an origin story shrouded in mystery. Supposedly first propagated at Thomas Rivers' nursery in Hertfordshire, England, the Valencia was introduced to the US in the 1870s. They were introduced twice in Florida, first in Palatka By Gen. Henry Shelton Sanford around 1870 and then at Federal Point by E.H. Hart. Known initially in Florida as the Hart, Hart's Late, Hart's Tariff, or Hart's Tardiff, it picked up the name Valencia from a Spanish-grower in California who recognized it as a late-growing variety from Spain. Usually green when harvested and not appealing in appearance, the Valencia produced abundant juice with flavor well combined in acidity and sweetness. The Valencia's juice later made it the most widely and extensively planted orange variety because it was the preferred variety to make frozen orange juice concentrate.³⁸

Even before contributions from professional scientists, growers used trial and error to develop techniques and varieties that greatly improved the Florida citrus industry. In fact, the establishment of reputable nurseries in the late 1800s facilitated the growers' acceptance of select varieties. The expansion of Florida's transportation network not only extended the boundaries of its citrus production. It also created a new boom in citrus plantings, and this increased demand for seedlings and budwood for new groves led to a proliferation of commercial nurseries. It was at one of these nurseries where a scientist named H. Harold Hume started extensive research on citrus and began a legendary career as a research botanist, horticulturalist, agronomist, and university professor.

³⁸ Hume, *The Cultivation of Citrus Fruits*, 67-68; "Episode 38: Citrus Industry (History of Central Florida Series)" YouTube podcast by RICHESMI. https://youtu.be/VJEJ_Tz4ZO0. [accessed April 2, 2018].

Born in 1875 in Ontario, Canada, H. Harold Hume attended Ontario Agricultural College and then Iowa State University, where he received his B.S. and M.S. degrees in horticulture in 1899 and 1901 respectively. He first started working as a researcher at the Florida Agricultural College in Lake City in 1904, which later moved to Gainesville at the University of Florida. Hume then obtained employment in 1906 at one of the most important sites in Florida citrus industry history, the Glen St. Mary Nursery. Hume began his esteemed career in agriculture working as a secretary for this nursery.³⁹ Despite the humble beginnings working at this company, it was at the Glen St. Mary where the scientist Hume started extensive research that eventually became the first authoritative work on citrus cultivation.

The story of Glen St. Mary Nursery exemplifies the biological innovation that emerging nurseries contributed to the rebuilding of the Florida citrus industry after 1895. Commercial nurseries operated by competent horticulturalists offered growers a source of reliable planting stock and industry leadership, as members and employees of these nurseries provided written evaluations on varieties, techniques, and ideas concerning standardization into Florida citrus nomenclature.⁴⁰ Nurseries acted as laboratories for breeding and propagating citrus varieties. They also offered a gateway for young agricultural scientists like H. Harold Hume to play a part in the research and work that left an indelible impact on Florida's agricultural development in the 20th century.

George Lindley Taber started Glen St. Mary Nurseries. A native of Maine and former stockbroker for the Chicago Board of Trade, in 1881 Taber bought twenty acres at the

³⁹ "Harold H. Hume (1875-1965)," *Florida Citrus Hall of Fame* website. <http://floridacitrushalloffame.com/inductees/harold-h-hume/>. [accessed April 3, 2018]

⁴⁰ Weeks, *Florida Gold*, 229-230.

headwaters of the Little Saint Mary River, about twenty miles west of Jacksonville. Due to its proximity to the Seaboard Air Line Railway, Taber first sold fruit and surplus trees from groves he planted on this land. He incorporated the Glen St. Mary Nursery Company in 1883, and by 1907, his nursery was 470 acres in size, with 300 acres under cultivation, eighteen homes for managers and workers, plant sheds, a blacksmith shop, a carpenter shop, and barns for feed, hay, tools, and livestock. Hundreds of new fruits were tested at Glen St. Mary.⁴¹ He first specialized in deciduous fruits (peaches, pears, apples, etc.) but soon began experiments with cold-resistant citrus varieties, most notably the Satsuma, a small, easy-peeling orange.⁴² Satsumas were first tested on a large scale during 1905 and 1906, and during that season Glen St. Mary Nursery was the largest grower of citrus in America. By 1907, it had the largest and oldest bearing satsuma groves in the southern states. Its export of various seedlings and budwood broadened its renown. Their citrus trees were shipped domestically and internationally to developing groves in the West Indies, Spain, and Brazil.⁴³

Glen St. Mary Nursery Company introduced citrus varieties that came into standard use in the early-20th-century Florida citrus industry. In 1912, the Glen St. Mary negotiated with Chinese horticulturalist Lue Gim Gong to sell the resilient sweet orange variety he developed. A Chinese immigrant, Lue Gim Gong created orange and grapefruit varieties both flavorful and resilient to cold weather. By hand-pollinating Valencias with sweet oranges from the Mediterranean, Lue Gim Gong produced the Lue Gim Gong orange, a late-season variety

⁴¹ Glen Saint Mary Nurseries Company Historic Site, Glen St. Mary, FL., National Register of Historic Places #03001111, received September 23, 1993 and added November 7, 2003, Section 8, 1-2.

⁴² Weeks, *Florida Gold*, 144.

⁴³ Glen Saint Mary Nurseries Company Historic Site, Glen St. Mary, FL., National Register of Historic Places #03001111, received September 23, 1993 and added November 7, 2003, Section 8, 2-3.

considered the hardiest of sweet oranges. Glen St. Mary Nursery also popularized the Hamlin orange. After securing budwood from the Hamlin parent tree in Glenwood, Glen St. Mary planted a grove of Hamlin oranges at its branch center in Winter Haven in 1913. The nursery initially provided just a few Hamlin nursery trees for sale, but as more people learned of the Hamlin's fine quality and smooth rind, demand rapidly increased by the 1920s. Thanks to Glen St. Mary, Florida growers realized the Hamlin was an excellent early season orange variety and essential for a prolonged growing season.⁴⁴

Perhaps the most famous orange to be cultivated by Glen Saint Mary Nursery was the Temple. A hybrid between sweet and Mandarin oranges, the Temple orange's deep color, tender pulp, exotic flavor, and easy-peeling loose skin made it an irresistible orange variety to cultivate. Supposedly originating from an orange tree owned by Louis and Ethel Hakes near Winter Park, the Temple was named after William Chase Temple, a big land developer and citrus grower who recommended to the Hakes that they allow this orange to be further propagated by D.C. Gillette, owner of Buckeye Nurseries in Tampa. Gillette patented the rights to the Temple and first introduced the variety for commercial use in the 1917 Buckeye Nursery catalog. But Glen Saint Mary kept tabs on the Temple orange. Complaints arose alleging that Buckeye was selling seedlings that were inferior in quality once the Temple's demand skyrocketed after WWI. The complaints resulted in lawsuits claiming damages for breach of contract, and these lawsuits bankrupted Buckeye Nursery. When Buckeye's holdings were taken over in 1924, Glen St. Mary secured the copyright to the Temple orange and it became a consistent moneymaker for the

⁴⁴ Ibid, Section 8, 3-4.

company.⁴⁵ Besides introducing profitable orange varieties, Glen Saint Mary also introduced outstanding grapefruit varieties. The nursery experimented with grapefruit, a citrus crop not yet popular to Florida growers, and cataloged three grapefruit varieties based on their excellent quality, the Duncan, the McCarty, and the Marsh Seedless. These three varieties later became some of the most common grapefruit varieties commercially grown in Florida.⁴⁶

Glen Saint Mary Nursery helped institute the citrus varieties that helped the Florida citrus industry not only recover but excel in the 20th century. It was also in this involved citrus institution that H. Harold Hume wrote the first authoritative work on citriculture in 1926, *The Cultivation of Citrus Fruits*. The first detailed work on the botany, breeding, planting, cultivation, and overall commercial importance of oranges, grapefruit, and other citrus fruits, *The Cultivation of Citrus Fruits* remained a standard in the field for decades, having reeditions printed until the late 1950s. This book was the product of twenty years of work in researching and observing the scientific, mechanical, and economic advancements taking place in a rebuilding Florida citrus industry. It remains a key source for understanding the practices, products, and events transforming citriculture in the early 20th century.

The Cultivation of Citrus Fruits was comprehensively written as a guide for both small-time farmers and larger citrus operations. This book is evidence that agricultural scientists were starting to view the growing of citrus as an industrializing agricultural enterprise. Hume's chapter layout organizes step-by-step the knowledge and practices necessary not only to grow orange trees but to successfully start and operate a large-scale citrus farm. It details not only the

⁴⁵ Ibid, Section 8, 4; Hume, *The Cultivation of Citrus Fruits*, 88-89; Ethel Hakes, "The Romance of the Orange," Manuscript at Winter Park Public Library.

<http://archive.wppl.org/wphistory/TempleOrangeTree/TheRomanceOfTheOrange.pdf>. [accessed May 30, 2018]

⁴⁶ Ibid, Section 8, 4.

botany and incredible amount of citrus varieties existing by the early 1900s. It also explains the necessary tools, practices, and conditions to successfully grow, propagate, plant, fertilize, prune, harvest, process for market, and sell citrus fruits. Hume's opinion on what locations, techniques, and investments best proliferate citrus trees is an intermingling of past citriculture techniques with science, technology, and industrial ideal. His writing is fit for any experience level in citrus, whether as a guide for amateurs with small grove or as a handbook for experienced, professional citrus growers. By successfully explaining citriculture with scientific facts and research in *The Cultivation of Citrus Fruits*, Hume also brought to light the inevitability that a modern, industrialized future awaited the Florida citrus industry.

Comparing the practices of growers between the 19th century and the scientific evaluations of Hume in the early-20th-century illuminates the permeation of science and industrializing change in Florida citrus. One of the most obvious changes concerns better knowledge on how to adapt citriculture to Florida's natural environments. As mentioned previously, many citrus growers in the 19th-century did not fully consider the repercussions of mimicking the practices of successful groves. Though these practices might have been extremely effective for groves in one location, they could prove to be negating or even deadly to groves in their location. After finding out that variation in climate, elevation, and soil made a fixed pattern of citrus cultivation impossible in Florida, growers became more pragmatic in their imitations. Because there were few precedents or true citrus professionals as guides, they had to develop farming practices by hit-or-miss theories or careful emulation.⁴⁷ Either way, it took years for

⁴⁷ Week, *Florida Gold*, 56-57.

growers to develop enough environmental knowledge to identify what locations and conditions worked best for citrus, and the hardest lesson from nature came for them in 1894.

To avoid the mistakes of citrus forefathers, Hume outlined the most advantageous ways to control temperature, cultivate the soil, and prevent pests and diseases to better their groves. In the beginning chapters of *The Cultivation of Citrus Fruits*, Hume described the biology and characteristics of citrus species and varieties before detailing how to propagate citrus by way of seeds and cuttings of budwood. To help exhibit how to properly topwork a grove, Hume used multiple photographs provided by the Director of the Florida Experiment Station, entomologist Wilmon Newell.⁴⁸ This connection might seem minor, but it actually shows Hume's ties to one of the most influential promoters for the scientific study of citrus in the state, the Florida Agricultural Experiment Station. In fact, Hume was hired by the college in 1904 to be an active horticulturalist and botanist at its experiment station. This station's accomplishments in citrus over the early 1900s reinforced many of Hume's observations in his book. Passage of the federal 1887 Hatch Act brought about the Florida Agricultural Experiment Station. It was first affiliated with the Florida Agricultural College in Lake City, but when the University of Florida was constructed in Gainesville in 1905, the station moved there and reopened in 1906. On June 4, 1917, the Florida Legislature authorized the Florida Board of Control to establish an off-campus citrus research site called the Branch Experiment Station for Citrus Investigations. This station was created to delineate five concerns in the industry: diseases of citrus, insects affecting citrus, effects of fertilizers, soil study, and varieties and stocks. The facility was placed in Polk County, and construction began after \$10,000 in private funding was secured in 1919. The University of

⁴⁸ Ibid, vi.

Florida acquired an 84-acre tract of land north of Lake Alfred for the branch station, including 14.5 acres of already-established groves. By the early 1920s, this facility was renamed the Citrus Experiment Station.⁴⁹

Analysis of biological innovations through Hume's writings with the Citrus Experiment Station's history, demonstrates the dominating effects scientists had on the industry. Such an examination reveals the pressing problems that challenged Florida citrus and how scientists responded to these problems. Citrus has a host of natural enemies, but to illustrate the positive effects brought about by scientists, three nagging problems to the early-20th-century industry are discussed. Along with the perennial threat of frost and freeze to Florida's groves, scientists researched efficient fertilizer application as well as how to prevent the most serious disease affecting growers at the time, citrus canker.

John McPhee noted that the history of Florida citrus is measured in freezes.⁵⁰ He was right, for the devastating effects of the 1894-1895 freezes were always on growers minds as they rebuilt in the following century. The industry always had to prepare for the erratic but inevitable return of damaging freezing temperatures. The term "frost" was applied to the formation of ice crystals on the earth's surface, the frozen condensed water vapor that covered the ground in early mornings, but any drop in the temperature to 32 degrees Fahrenheit or below was sometimes called a frost. Frosts were also considered localized phenomena; they only caused damage in restricted areas of a grove. However, damage from "freezes" or "cold waves" was far more

⁴⁹ Letter to H.W. Snell, C. H. Thompson, F.S. Poole, J.A. Snively, L.L. Davis, and A.M. Tildon, June 18, 1919, Citrus Experiment Station 1919-1931 folder, Box 2, H. Harold Hume Collection (abbreviated HHH), Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida; University of Florida, Institute of Food and Agricultural Sciences, *The 100-Year Journey of the UF/IFAS Citrus Research and Education Center* (Gainesville: University of Florida, Institute of Food and Agricultural Sciences, 2017), 6-7.

⁵⁰ McPhee, *Oranges*, 46.

widespread and catastrophic. Freezes originate from the movement of air between high-pressure systems and low-pressure systems, which draws freezing cold air from the north down into the south. Rainstorms precede the arrival of freezes. Once the freeze sets in, the ground quickly gives up heat at nightfall, producing an inversion layer where air at ground level is much colder than the air a couple dozen feet above the surface. Far removed from the Appalachians, no mountain ranges protected Florida from cold waves blowing down from the Arctic Circle. When freezes came, they usually lingered for three days before subsiding. Most citrus does not survive long in freezing temperatures. When freezes occurred, the leaves shriveled, the trees defoliated, and the fruit dried out and became inedible.⁵¹ Frosts and freezes hurt hundreds of acres of Florida citrus groves in the 1900s. Damaging frosts occurred in 1911, 1913, 1919, 1921, and 1925. Severe freezes came in 1899, when temperatures dipped to ten degrees Fahrenheit, and in February 1917 after an especially cold winter.⁵² When a deadly freeze arrived in 1935, the Federal-State Agricultural Weather Service was established by Florida and the United States Weather Bureau. It became known as the Federal-State Frost Warning Service, perhaps the most effective scientific response to freezing temperatures. By the mid-20th century, this service employed a dozen or so meteorologists funded by the state through academic affiliation with the University of Florida. It also employed nine field agents to collect data weekly during the winter from weather stations interspersed through citrus-growing regions.⁵³

Hume described three ways to protect citrus groves from cold weather, but more importantly, he emphasized the importance of location and landscape to help avoid the

⁵¹ Hume, *The Cultivation of Citrus Fruits*, 318-321, 327-334; Warren, "Nature's Navels," 187.

⁵² Hume, *The Cultivation of Citrus Fruits*, 318-319.

⁵³ Warren, "Nature's Navels," 187-188.

deleterious effects of freezing weather. For instance, Hume praised the use of lakes as buffers against damaging freezes: “The ameliorating influence of adjoining bodies of water should not be overlooked, and, whenever possible, the grove should be so located as to receive the beneficial influence of heat slowly given off by them. The water is heated during the day. It parts with its heat more slowly than the land during the night...” Locations by lakes were optimal for groves to survive freezing weather, especially on their southeastern shores of large lakes where northeasterly winds are slightly heated over the body of water before contacting the trees. Hume also emphasized the importance of windbreaks. Whether made up of a wall of trees, like the pines and cabbage palms that were planted along the shores of the Indian River, or movable walls built of wood or sheet metal, windbreaks helped keep freezing winds from weaving through groves.⁵⁴ Elevation also played a factor in how frosts and freezes damaged groves. Along the hills of the Lake Wales Ridge, trees planted in higher climbs, along the slopes or crests of hills, fared better than trees in valleys and low-lying areas. When freezing air inverted and sank to the earth’s surface on still nights, the air rolled down off hills and nestled in pockets and knolls.⁵⁵

The three strategies recommended by Hume for freezes were wrapping, heating, and banking. For young trees especially vulnerable because they offered no obstruction to air movement and lost heat rapidly, Hume recommended wrapping the trunks and branches from the ground up in newspapers or a similar sort of insulation. For mature groves, manmade heating was an effective and common technique. In order to raise the temperature in the grove, one

⁵⁴ Hume, *The cultivation of citrus fruits*, 225-228, 344-345; Larry. K. Jackson, *Citrus Growing in Florida*, 3rd ed. (Gainesville, University of Florida Press, 1991), 120-122.

⁵⁵ McPhee, *Oranges*, 35-36.

needed a substantial amount of fuel and labor. No less than twenty-four hours of fuel but preferably more should be at hand to keep a grove heated, and labor was needed to help light, relight, maintain, and put out heat sources, especially if the freezing temperatures lasted several days and nights. The heat sources should be spaced between every one or two trees, meaning that one acre of groves might have up to seventy fires or heaters in its rows. The most frugal growers kept any wood cleared from new grove plots as a ready source of fuel for wood-fires. Oil heaters were useful but more expensive. Besides having to buy enough oil to keep all of the heaters going, growers had to buy hundreds of heaters, for each tree was recommended to have a heater for itself. If the heaters were not properly cleaned between uses, the oil was poor quality, or not enough were used to combat cold, groves suffered. Coke heaters were a little more efficient, mainly because they burned well and coke can be stored inside or outside and never deteriorate, but these heaters also had to be maintained, properly stocked with fuel, and plentiful in number to be effective. Hume saw that there was no method of protecting the trunks more efficacious than banking, the mounding of dirt at the base of each tree. The dirt insulated the tree from freezing conditions, but if the dirt used was dug up too close to the surface of the soil, it risked harboring pests and diseases that attacked the trunk and roots. Banking was also labor-intensive, because every tree had to be covered at its base.⁵⁶ In a sense, freezes helped the industry eliminate smaller producers.

Money was also necessary for growers to fertilize their groves, but in the early 1900s, fertilizers were far less understood than the nature of freezes. In the century prior, growers used animal manure, cottonseed oil, shell deposits, bone meal, and blood meal as fertilizer. Some

⁵⁶ Hume, *The Cultivation of Citrus Fruits*, 334-343.

mixed their own, while others dug up muck from nearby lakes and rivers. The most expensive option, commercial fertilizer, could be bought by the ton and shipped by railroad. Nonetheless, fertilizer use remained a mystery for many growers, and they viewed commercial fertilizers with suspicion. The costs, questionable effectiveness, and the practice of selling low-grade ingredients at high prices caused such doubt, so much so that Florida enacted a state fertilizer inspection law in 1889, but even with regulation by the Florida Department of Agriculture, growers were haphazard with their fertilizer applications.⁵⁷

Florida's soils and natural environments did not help with this conundrum. In Florida, soils classed by native cover included high pineland, Flatwoods, high hammock, low hammock, and hickory scrub were commonly developed to grow citrus fruits. In Hume's opinion, the most elevated, well-drained, and optimal soil for citrus was in high pineland. Sandy but loamy in composition, high pineland usually contained enough humus and natural nutrients "to sufficiently respond to good fertilizer treatment." Flatwoods contained considerable humus for citrus cultivation, but the lower elevation meant poor-draining soil, which made it unsuitable for citrus unless excess water could be diverted. Like high pineland, high hammock was also well drained and had deep rich soil containing humus. Low hammock was also suitable its large amounts of humus and nitrogen-rich soil, but because it is situated in floodplains along rivers, growers had to stay diligent in diverting or leveeing water when their groves were established on low hammock lands. Hume pointed out that citrus could thrive in lower elevations, as they did along the Caloosahatchee River in Southwest Florida. The dry, sandy, but elevated hickory scrub contained a good admixture of nutrients and also responded well to fertilizer. Seemingly not

⁵⁷ Weeks, *Florida Gold*, 64-65; Fertilizer Inspection Act, Laws of Florida, 1889, Chapter 3858, number 12.

arable, hickory scrub corresponds in some respects to high pineland, for it was also made up of sand, loam, and humus and was well adapted to citrus fruits. Scrubland could be utilized favorably for citrus cultivation, as demonstrated through the extensive citrus acreage established in hickory scrub along the Indian River and even in the more elevated scrubland of the Lake Wales Ridge.⁵⁸ No matter their natural compositions, Hume recommended all Florida soil types needed fertilizer. Crops of citrus cannot be harvested year after year without nutrient depletion unless some return was made to the soil.

By the 20th century, scientists had a far better understanding of what elements entered into the composition of citrus trees. Hume identified what became known as macronutrients for citrus trees: carbon, oxygen, nitrogen, hydrogen, potassium, calcium, magnesium, phosphorus, sulfur, iron, and chlorine. He also noted that out of those obtained from the soil, all except nitrogen, potash (potassium), and phosphorus were usually present in sufficient quantities. For these remaining three elements, Hume recommended sources other than manure, which was nitrogenous but also supposedly caused exanthema or dieback, a physiological gum disease that slowly damaged twigs, branches, and fruit. For phosphorus, phosphate rock was used but bone meal was the superb source for phosphoric acid, which was released when the bone slowly decomposed in the soil. Bone was also an excellent material from which to obtain lime, which made citrus trees stronger and reduced the acidity of soil in order to allow cover crops to grow and beneficial soil bacteria to live.⁵⁹ Hume witnessed the widespread but dangerous belief at the century turn that any amount of lime strengthened citrus groves. Lime was cheap and easy to obtain from burned shells, ground limestone, or hardwood ashes, but too much lime destroyed

⁵⁸ Hume, *The Cultivation of Citrus Fruits*, 214-220.

⁵⁹ *Ibid.*, 281-283, 290-291.

the humus content and bacteria in the soil and yellowed the leaves of citrus trees. Unlike phosphorus and lime that could be mined from Florida rocks, potassium was not mined in the state and was not cheap. The five sources for potash mentioned by Hume were high-grade potash, low-grade sulfate of potash, muriate of potash, Kainit, and wood-ashes. Wood-ashes were the least costly way to apply potassium, but their potash content was usually very low. Kainit, a raw salt, was also used, but the bulk to the unit of potash was so great that cost of handling and freight charges made it too expensive to recommend. Sulfates were the safest and best source; high-grade sulfate of potash was preferable to low-grade because the cost of freight and handling was less to the unit of potash. Nitrogen had many sources, including chemical sources like nitrate of soda and sulfate of ammonia or organic sources like dried blood, cottonseed meal, and castor pomace.⁶⁰ Hume endorsed chemical sources because they did not harbor bacteria or diseases hidden in some organic sources. He also warned of mixing fertilizers from mineral sources only because the fertilizers comes out caked and hard to spread by hand or with a mechanical distributor. Mineral-sourced fertilizers had to be mixed with organic bases like ground bone or ground tobacco for easier handling. Fertilizer could be applied four to five times per year, especially on younger trees, but for mature groves, two applications per year, one in early spring and one in early fall, usually sufficed despite loses from leaching. However, if one considers the amount of fertilizer recommended for a single tree, the amount of fertilizer recommended for a single grove becomes prohibitively expensive. Hume believed trees producing ten boxes of fruit should receive thirty to forty pounds of fertilizer each, roughly a ton for every fifty trees.⁶¹ While scientists recognized the elements essential for citrus and how to

⁶⁰ Ibid, 283-286, 291-293.

⁶¹ Ibid, 293-294, 299-303.

acquire them, their conclusions on the amount needed to successfully feed a grove still made fertilizer a costly essential for Florida citrus growers.

Scientists at the Citrus Experiment Station also continued make strides in fertilizer experimentation, helping answer questions that Hume posited in *The Cultivation of Citrus Fruits*. In the 1921-1922 season, chemist R.W. Ruprecht experimented with macronutrient fertilizer elements at the station's older groves, determining optimal rates for potassium amendments, comparing nitrate of lime and nitrate of soda as nitrogen sources, and dabbling with phosphoric acid in nearby commercial groves.⁶² Fertilizer research remained a priority with potash experiments continuing into the 1923-1924 season.⁶³ Besides the three macronutrients detailed by Hume, the Citrus Experiment Station demonstrated that applications of zinc and copper also improved citrus tree health and yield, influencing micronutrient amendments to become routine in the industry. In the 1930s, physiological diseases with no known cause were found to be the side effects of certain nutrient deficiency. For instance, "Frenching" or "Mottled Leaf," a minor condition characterized by yellow-splotched, curled, undersized leaves, was determined to be a sign of zinc deficiency, a discovery that prompted scientists to look into other metallic elements that Florida citrus groves might lack in. The "exanthema" or "dieback" that affected groves since the late-1800s was attributed to various causes, including nitrogenous fertilizers like manure and ammonia, but dieback was caused by copper deficiency. Though it was discovered in 1912 that copper sulfate applied to the ground under citrus trees cured the disease, it was not until the late

⁶² University of Florida/Institute of Food and Agricultural Sciences, *The 100-Year Journey of the UF/IFAS Citrus Research and Education Center*, 7-8.

⁶³ "Citrus Experiment Station Experiments," October 1, 1923, Citrus Experiment Station 1919-1931 folder, Box 2, HHH.

1930s that regular use of copper eliminated dieback as a serious problem in the industry.⁶⁴ An annual application of copper and zinc sprays was sufficient enough to avoid nutrient deficiency and solve mysterious diseases.

The Citrus Experiment Station also researched citrus pests and diseases. After the Florida Legislature appropriated \$10,000 in 1924, the station began studies of the green citrus aphid, an invasive pest detected in Tampa. These aphids attacked the young growth of citrus trees, including twigs, buds, leaves, blossoms, and fruit, troubling growers as it spread from grove to grove. Thanks to the entomologists who successfully averted the cotton cushiony scale crisis in late-1880s California by discovering the natural enemies to these scale insects, Australian vedalia ladybugs, citrus growers in the early 20th century were willing to try beneficial insects in their groves. Entomological warfare was also waged on green citrus aphids in Florida. Hume noted that there were a number of insects that preyed upon these pests, including the vedalia ladybug, the blood-red ladybug, and the convergent ladybug. Scientists also used ladybugs and parasitic wasps to control other pests like mealy bugs, hemispherical scale, soft brown scale, wax scale, and black scale. Hume also recognized the importance of these early biocontrol methods as a form of biological innovation in citrus. The study of insects allowed scientists to find a more natural way to fight pests without the use of manmade poisonous insecticides. Hume opined of etymology's success, "So successful has been this line of work that many species of insects which at one time threatened the very life of the citrus industry have been reduced to a place of

⁶⁴ Hume, *The Cultivation of Citrus Fruits*, 494-500; Jackson, *Citrus Growing in Florida*, 171-172.

no importance.”⁶⁵ These etymological breakthroughs rippled through the Florida citrus industry, legitimizing the knowledge and recommendations of scientists to growers.

Hume had a role fighting a serious disease that scared many Florida citrus in the early 20th century, citrus canker. Until citrus greening in the 2000s, canker was the deadliest bacterial disease for citrus trees found in Florida. Hume wrote that citrus canker originated in Asia. In 1910 or 1911, infected trees were brought to Florida and the disease gained a foothold along the Gulf Coast and in inland citrus sections. Hume remembered the foreboding feeling the unidentified disease brought citrus growers. “At an early date it was observed to be extremely virulent and infectious... It was further noted to be unsafe to touch or handle diseased trees, and it was soon learned that canker could be spread or carried by any agent or means which might come in contact with virile germs on an infected tree.”⁶⁶ One drop of rain running down a branch is capable of carrying millions of bacteria to other parts of the tree. Canker was identifiable by small brown spots that appeared on fruit, leaves, and branches. The disease resembles scab, but canker’s spots are rounder and softer than scabs. Canker did not cause fruit to rot directly, but opened the door for other fungi to enter and spoil the fruit. Hume knew the organism that caused canker, short, motile, rod-shaped bacterium called *Pseudomonas citri*. It attacked all kinds of citrus, and the only safe treatment for it was “...to destroy the infected trees with fire and disinfect the soil where they stood and for some distance around with formaldehyde.” It was, in

⁶⁵ Hume, *The Cultivation of Citrus Fruits*, 452-453, 544-546.

⁶⁶ *Ibid*, 487.

Hume's own words, "a very serious disease and at one time threatened the destruction of the citrus industry of Florida."⁶⁷

It took more than twenty years to eradicate the outbreak of citrus canker. Between, 1913 to 1923, \$2.5 million in state and private funds were spent to control the disease. In 1915, the State Plant Act placed the work of canker eradication under the State Plant Board, with Wilmon Newell taking charge of the campaign. Hume praised the work of Newell in containing the disease through quarantine, spraying, and destruction of infected trees in Florida. "...Probably for the first time in history, a pernicious disease was mastered. Florida owes an everlasting debt of gratitude for this man." After years of quarantine efforts, by 1933 citrus canker was officially deemed eradicated since being first detected in the early 1910s.⁶⁸

After their successful handling of the citrus canker outbreak, agricultural scientists not only became influencers on Florida citrus but saviors of the industry, the main defense against future threats to the industry's well-being. Scientists further transformed into captains in the industry by the 1930s, men that would lend a large helping hand in trying to exploit and make new, consumer appealing products for a burgeoning juice market. The increased government support for scientific research was evident with further expansion at the Citrus Experiment Station in Lake Alfred. It took until 1926 for the first faculty member to be stationed full-time at the Citrus Experiment Station, plant pathologist W.A. Kuntz. By then, there were sixty-three acres planted for experimental work, including a laboratory, a greenhouse, and an insectary for

⁶⁷ Ibid, 486-489, 491; Citrus canker testimonial, Citrus Experiment Station 1919-1931 folder, Box 2, HHH.

⁶⁸ Ibid, 487-488; T.R. Gottwald, "Citrus Canker," *The Plant Health Inspector*. <http://www.apsnet.org/edcenter/intropp/lessons/prokaryotes/Pages/CitrusCanker.aspx>. [accessed September 12, 2018]; University of Florida/Institute of Food and Agricultural Sciences, *The 100-Year Journey of the UF/IFAS Citrus Research and Education Center*, 28.

rearing ladybugs. By 1935, the Citrus Experiment Station had five full-time staff members. That same year, the University of Florida declared that all citrus research activity would take place at the Citrus Experiment Station, cementing its place as the center of citrus research in Florida. The state legislature accepted an appropriation of nearly \$47,000 to the station, giving it more adequate funding for expansion. To better manage the growing facilities, horticulturalist Arthur F. Camp was appointed director of the Citrus Experiment Station, the first director to work and live on site.⁶⁹ The continuation of this dominant research station, now known as the Citrus Research and Education Center, shows that science were already leaving an indelible impact on the industry in the early 20th century.

But Hume's life work exhibited the immense influence an individual can make on the development of an agricultural industry. Hume had to face another invader to Florida citrus in 1929, the Mediterranean fruit fly. A great threat to the state's whole fruit and vegetable industry, this fly's ability to affect all sorts of produce caused practically every state employee in agriculture and many from private industry to be recruited to fight the invasion. Hume was among those recruited for the fight. His work in the eradication campaign led to his appointment to Assistant Director of Experiment Stations in 1931. After active association with the Glen St, Mary Nurseries for twenty-five years, Hume rejoined the faculty at the University of Florida and became the dean of the College of Agriculture in 1938. Hume progressed steadily in the administration of the University. In 1943, he became provost for agriculture and from 1947 to 1948 he served as the university's interim president. He spent ten hours each day in the president's office but always found time to tend to the affairs of the College of Agriculture,

⁶⁹ Ibid, 8-9.

spending his lunch hour in his office speaking with department heads, students, or anyone who wished to see him. Subsequently, Hume was named chairman of the administrative committee of the Inter-American Institute of Agricultural Sciences and was later recognized with an honorary doctor of science degree from Clemson University. As President of the Florida State Horticultural Society, Hume helped develop standards to control shipment of immature fruit and was instrumental in establishing the State Plant Board. He remained provost of the University of Florida's School of Agriculture until he retired in 1949. Even in retirement, he continued his work, authoring of several articles and books. Affectionately known as the "Grand Old Man of Agriculture," Hume died in 1965.⁷⁰ He lived to see an industry he helped so much transform into something so different from what he saw in the early 1900s.

But Hume's life also reveals a few other truths related to the modernization of the early-20th-century Florida citrus. His work between an old center of knowledge and a new center of knowledge in the industry, the Glen St. Mary Nursery and the Florida Agricultural Experiment Station respectively, foreshadowed the intellectual shift taking place within the industry. Scientists superseded nurserymen as influencers, but scientists also had to recognize the accomplishments of the prescientific Florida citrus industry, the one where a multiplicity of varieties and better grove management came about without the need of educated professionals. Hume was also honest about the changing nature of the business. Once small in scale and arguably primitive, citrus farming became more capitalistic in character. In order to adequately protect groves from danger and feed them the right, proper amount of food to thrive in Florida's nutrient-poor soils, growers increasingly needed disposable capital to buy heaters, fertilizers, and

⁷⁰ "H. Harold Hume, 1875-1965," *Florida Citrus Hall of Fame* website. <http://floridacitrushalloffame.com/inductees/harold-h-hume/>. [accessed January 25, 2018].

other biological innovations that protected Florida citrus from a variety of enemies. While the innovations, investments, and ideas of scientists proved to be the industry's saving grace from destructive pests and diseases, they also redesigned the industry biologically to be as profitable as possible.

CHAPTER THREE: MECHANIZATION

While biological innovation was a key factor in the Florida citrus industry's modernization, mechanical innovation embodied the march of progress. In *Creating Abundance*, Alan Olmstead and Paul Rhode discussed this primacy of mechanization in the historiography of American agriculture. It has long been viewed as the dominant force behind agricultural productivity change. Despite their argument for biological innovation, Olmstead and Rhode noted that mechanization remained the prime example of American farm transformation in the 19th and early 20th centuries.⁷¹ Though biological innovation was a distinct characteristic of the early-20th-century Florida citrus industry, mechanization certainly made the Florida citrus industry more efficient in operations

“Golden Harvest,” a pageant celebrating the Florida Citrus Industry in 1937, romanticized the introduction of machinery in the groves, inventions that saved labor, time, and overall farming costs. The play recalled that along with the utilization of improved citrus varieties, old plows were replaced by new designs. Mighty tractors replaced oxen and mules. Manually-pressurized knapsack sprayers and barrel sprayers were replaced by power-driven sprayers and dusters, machines that not only sprayed but billowed out clouds of insecticides, performing in minutes the work previously done in hours or days. But where mechanization made its greatest impact in Florida citrus was in packinghouses. Once shelters where fruit was washed by hand and sized in various, crude homemade sizers, packinghouses were mechanized with automated, labor-saving machines and conveyors that soaked, cleaned, dried, sorted, and

⁷¹ Alan L. Olmstead and Paul M. Rhode, *Creating Abundance: Biological Innovation and American Agricultural Development* (New York: Cambridge University Press, 2008), 4-6.

wrapped the fruit without armies of laborers. Step by step, machinery characterized the modern packinghouse.⁷²

This chapter is about these steps. In the 1910s and 1920s, machines powered by fossil fuels and electricity were patented to process citrus fruits more efficiently in packinghouses. While human labor remained the preferred way to harvest fruit in the groves, the early-20th-century citrus businesses embraced the effectiveness of powered machinery in packinghouses. This in turn prompted the building of newer packing facilities to accommodate machinery and the overall increase in fruits being produced in Florida. This chapter explains how mechanization influenced the growth and industrialization of the Florida citrus industry. Starting in the 1910s, the Florida citrus industry began using powered machines extensively in packinghouses, transforming these facilities into building complexes that resembled factories that manufactured goods, and less like farms growing, sorting, and shipping fruit. By the 1930s, machinery organized assembly lines for fruit processing in Florida packinghouses; besides merely harvesting fruit, these facilities changed the fruit plucked from trees into clean, colorful, and attractive products of nature for shoppers at produce stands throughout the country.

The accommodation for machinery affected packinghouse designs, and energy-efficient, utilitarian ideas were incorporated in the construction of these packing facilities. Packinghouses changed from wooden barns into large complexes of metal and steel buildings employing not only dozens of people but various kinds of heavy machinery strictly used to process citrus fruits. The overall goal of this chapter is to examine the mechanization of the early modern Florida

⁷² Nina Oliver Dean, "Golden Harvest: The Romance of the Florida Citrus," presented at Semi-Centennial celebration of the Florida State Horticultural Society in Silver Springs, Ocala, Florida, April 14, 1937, 16-17. Citrus Brochure Collection, Winter Garden Heritage Foundation, Winter Garden, Florida.

citrus industry and show how technological advancement helped machines become widespread, imperative features to the operations of this agricultural enterprise. The evolution of Florida's early-20th-century citrus packinghouses best represents agricultural industrialization taking place within the Florida citrus.

This change in packinghouse machinery overshadows the change brought from the introduction of tractors into the Florida citrus industry. Though their impact was small in citrus cultivation, tractors were nonetheless utilized for a few activities in the groves. Besides hauling fruit from groves to packing facilities, tractors made much less difficult the plowing, spraying, and hedging of groves throughout the state in the early 20th century. A contemporaneous surge in the use of railroads within Florida testifies to machines enhancing agricultural activity. The widespread use of refrigerated railroad cars, plus the increased construction of various railroad lines that traversed Florida's citrus regions, made the transportation of citrus fruits by rail more feasible, reducing fruits' transit times to markets and greatly limiting spoilage that occurred during long journeys. But while increased utilization of tractors and railroads are characteristic of agricultural progress, it was the transformation of packinghouses where machinery made the most significant impact in the industry.

A growing need to use powered machinery by Florida's citrus growers was atypical with how other farmers reacted to mechanization. There was a disassociation with agricultural mechanization seen on other farms in the early-20th-century US South. While the harvesting of oranges and other citrus fruits demanded human labor, the necessity for many men to pick citrus did not stop certain growers from experimenting with machinery in other stages of their operations. Patented inventions for citrus preparation in the 1910s show the growing

technological complexity entering Florida's packinghouses. However, mechanization was not so much a popular idea to embrace as it was a pragmatic adaptation for large-scale farms wanting to expand their operations and profit margin. While biological innovation was crucial for manifold citrus production in the early-20th-century, technological innovation opened the door for the considerable expansion of farm sizes by big growers in the Florida citrus industry. Like other manufacturers, distributors, businessmen, and farmers in early-20th-century America, citrus growers in Florida embraced mechanization of their operations to integrate their business opportunities in the industry.⁷³ Growers vertically integrated by becoming manufacturers of necessary farming equipment, seeds, and supplies, expanding production capabilities while cutting unit costs throughout the industry. Others horizontally integrated; packers and jobbers that acted as middlemen between growers and buyers of wholesale fruit mechanized their operations to expand service capabilities and clientele. But as citrus businesses utilized machines, the costs of being a profitable citrus farmer increased. It became harder for smaller growers to survive in Florida's competitive citrus industry. Besides examining the inventions that encouraged the industry's mechanization, this chapter demonstrates how the mechanized industrial ideal changed the future of citrus farming in Florida. Machines not only altered who could participate successfully in the citrus industry, they changed the very imagery of the typical citrus farm. While thousands of acres of neatly-lined, manicured citrus groves exhibited the implications of biological innovation, the construction of packinghouses exemplified the immense effects of mechanization on the early modern Florida citrus industry.

⁷³ Harold D. Woodman, "Class, Race, Politics, and the Modernization of the Postbellum South," *The Journal of Southern History* 63, No. 1 (February 1997), 3-22; David B. Danbom, *Born in the Country: A History of Rural America* (Baltimore: Johns Hopkins University Press, 2006), 184; David Kennedy, *Freedom from Fear: The American People in Depression and War, 1929-1945* (New York: Oxford University Press, 1999), 201.

Unlike biological innovation, powered machinery had almost no antecedents for Florida citrus farms in the 1800s. Even at the century's turn, the harvesting and preparation of citrus fruits remained simple in design. Citrus fruits picked from the groves were taken to nearby shelter, typically barns, outbuildings, or tents, to be packed for transit. Nearly all growers picked and packed their own fruit, and many different systems of handling and packing characterized the Florida citrus, with no uniformity in method and plenty of variation in the quality of citrus fruits marketed.⁷⁴ In the late 19th century, citrus was first stored in barrels of sawdust until growers noticed that fruit shipped in this manner spoiled quickly. One grower from Palatka named E. Bean saw the need for better packaging and originated the first standard package for Florida citrus. When soliciting fruit order in upstate New York, Bean saw fruit packed in all sorts of containers, including soap boxes, meat boxes, and dry goods boxes, usually unwrapped and in bad order. Bean gathered information on packing oranges from Italian growers and other European citrus farmers and developed a 12" x 12" x 27" citrus crate. This design was adopted as the standard crate for the Florida citrus industry when introduced in November 1875 at the Fruit Growers' Convention in Fernandina. Bean also discovered how to completely fill citrus crates to make a solid pack. He spent time experimenting, sizing, and learning how to place fruits in crates, eventually developing the first standard sizes used well into the 20th century.⁷⁵ To better protect shipped fruits, growers also began wrapping each individual fruit in paper before packing them into wooden crates. While a better method to prevent spoilage, the practice of packing fruit became far more meticulous, time-intensive, and labor-intensive. The laboriousness

⁷⁴ H. Harold Hume, *The Cultivation of Citrus Fruits* (New York: MacMillan Co., 1926), 389.

⁷⁵ E. Bean, "Early History of Orange Packing," *Florida Agriculturalist*, Nov. 7, 1900, 1; Hume, *The Cultivation of Citrus Fruits*, 369-373

of packing by the end of the 1800s caused some citrus businesses to offer their services as packers and jobbers, charging taxes on each crate to help growers pack and sell their fruits.⁷⁶

Since the late 1800s, the handling of fruits underwent far-reaching change, so much change that the small, individual packinghouses that characterized 19th-century citrus farming had disappeared from the fringes of groves. More complex packinghouse layouts and operations readied Florida's citrus fruits, processing them in assembly line fashion through workstations in more spacious facilities. The process for readying citrus fruits for sale turned into an elaborate multistep system requiring larger packinghouses, specialized machinery, and semiskilled labor. The overall increase in production plus the need to make fruit attractive enough for consumers to purchase turned the harvesting of citrus from a straightforward process into a sophisticated operation.

Generally, the preparation of citrus fruits followed a specific order: first, fruit was unloaded from field boxes onto a gravity roller conveyor that carried fruit under its own weight to a storage bin located under the packinghouse. It was then led by conveyor belts into washing machines where fruit was placed in water tanks for soaking and rinsing, then fed through mechanical scrubbers with revolving brushes, before it passed through long, closed-in driers to remove surface moisture. Fruits were then separated by variety and sent on a slow-moving conveyor belt to graders, people who carefully examined each fruit, picked out the culls, and separated fruit by grade. Once graded, round citrus like oranges and grapefruits were further separated by diameter in mechanized fruit sizers. Once in their respected bins, each fruit was

⁷⁶ Mark Howard Long in "Episode 38: Citrus Industry (History of Central Florida Series)" YouTube podcast by RICHESMI. https://youtu.be/VJEJ_Tz4ZOO. [accessed January 29, 2018].

wrapped in thin strong paper before being packed for shipment. Fruits were sometimes covered with paraffin for protection and to give them an attractive shine. They were then marked by branded seals that advertised the origins of the fruit. Finally, fruit was placed in crates carefully to ensure maximum capacity with minimum abrasion. For the fruit to fit a crate, it was placed in position in boxes according to predetermined diagrams that represented the best way to snugly and tightly pack citrus fruits for transit.⁷⁷

Rather than observation and trial-and-error experimentation, mechanization in Florida citrus was inspired by practicality. Succeeding the simple but successful invention of E. Bean's orange crate, the legacy of Lee Bronson Skinner exemplifies the practical rationale of Florida citrus growers shaping the development and integration of the recovering citrus industry. Lee Bronson Skinner, also known as L.B., was a large citrus grower from Dunedin, a town on the Gulf Coast in Pinellas County. Though not the first grower to make machines for citrus packing, L.B. Skinner was most responsible for mechanizing the Florida citrus industry through his patented inventions that allowed citrus farmers to process and prepare tons of fruit in a timely manner. Though machinery from California was utilized by a few Florida growers before 1910, Skinner's manufacturing of citrus fruit machinery prompted packinghouses throughout the world to mechanize.⁷⁸ Beginning in the 1910s, Skinner patented machinery that could wash, scrub, and sort the fruit that came from his groves. Other area citrus producers and packers took note of

⁷⁷ Hume's chapter titled "Handling The Citrus Crop" not only details the proper harvesting of citrus but also describes how fruit is processed and packed in "modern" packinghouses. Hume, *The Cultivation of Citrus Fruits*, 391-416

⁷⁸ Arriving to Riverside, Ca. in 1899, Iowa-born Fred Stebler is credited with the invention of citrus packinghouse equipment. He went on to establish his own business to manufacture citrus machinery, California Iron Works, which roused the creation of other rival citrus machinery companies in California. For more on Stebler, see "Inventor of Citrus Machinery Claimed," *San Bernardino County Sun*, June 25, 1957, 19. Private Florida citrus businesses like Chase & Co. (see Chapter 4) in Sanford bought and used California citrus equipment in their facilities, a fact they advertised in newspapers. "Chase & Co. Packers & Shippers," *Deland News*, February 5, 1909, 6.

Skinner's inventions and placed orders to use these machines in their own operations, which enabled L.B. Skinner to focus his attention less on growing citrus and more on manufacturing citrus machinery. Skinner's inventions and subsequent success in exporting these inventions across the Atlantic showed that citrus industries not only in Florida but worldwide desired to mechanize and thus industrialize in the early 20th century.⁷⁹

Like other innovators in the Florida citrus business, Skinner was not originally from Florida. Born in Watertown, Wisconsin, in 1861, he first moved to Hillsborough County in 1883 with his family. Throughout the 1910s, Skinner would patent machines that became common apparatuses in Florida packinghouses.⁸⁰ One of his first patented machines was his 1910 "fruit-cleaner," an "improved cleaning apparatus" for citrus and other fruits and vegetables. It was comprised of a vertically-arranged flat brush suspended on pivoted hangers and a rotary brush arranged adjacent and parallel to the lower edge of the flat brush. With means for both reciprocating one brush and rotating the other, this invention acted as a trough of moving brushes for fruit coming from the groves. With another set of flat and rotary brushes added on top of the first set, the machine's ability to wipe away dirt and debris doubled, thus making cleaning by dozens of pairs of paid workers' hands obsolete.⁸¹

Skinner later patented a "fruit-drier" in 1913. More economic than hand-drying but simple enough in design with few parts and low likelihood to malfunction, his dryer utilized "small streams of air" that were "forced directly upon fruit." The fruit was rotated to bring all

⁷⁹ David Knupp, "Dunedin's Citrus History," *Dunedin Historical Museum*, June 24, 2015.

<https://dunedinhistoricalmuseum.wordpress.com/2015/06/24/dunedins-citrus-history/>. [accessed July 10, 2017].

⁸⁰ "Lee Bronson Skinner (1861 - 1936)," *Florida Citrus Hall of Fame*.

http://floridacitrushalloffame.com/index.php/inductees/inductee-name/?dd_asId=1069. [accessed July 10, 2017].

⁸¹ Lee Bronson Skinner, Fruit-Cleaner, US Patent 967608 filed June 2, 1910 and issued August 16, 1910.

<https://patentimages.storage.googleapis.com/39/3e/70/f70d96647e8fb5/US967680.pdf>. [accessed July 11, 2017].

parts of the fruit into contact with moving air streams. As fruit made its way through the dryer on a horizontally-lined conveyor of rollers, fans generated air that was blown downward and in the opposite direction to the rollers' rotations, hastening the drying process.⁸² In 1917, this dryer would be redesigned to include the "wiping action of a yielding absorbent diaphragm." This diaphragm above the passing fruit was made of cotton or "any suitable porous textile fabric" that allowed passage of air to the fruit, and it also moved from side to side to more thoroughly wipe away moisture. The conveyor of rollers also alternated in elevation along its width to cause fruit to roll against the direction of the diaphragm.⁸³

Skinner also patented a "fruit-sizer" in 1913, an invention that would "automatically separate [large and small] fruit, such as oranges into lots, each lot containing fruit of the same size... [and] size the fruit without causing them to rub against one another..." A ten-foot-long rectangular machine, this sizer utilized rollers plus a chain-link conveyor belt of cones to keep apart but propel fruit single-file into its central portion, where adjustable brackets divided the fruit by size. Arranged from largest to smallest, up to seven of these brackets filtered the fruit out of the machine and down boards that deposited like-sized fruits into separate bins. Skinner's fruit sizer not only characterized mechanization modernizing Florida citrus; it also emphasized the increased market regulation on citrus fruits in the early 20th century.⁸⁴

Manufacturing his patented inventions, L.B. Skinner made packing machines that more and more Florida citrus growers wanted to use in their own packing operations. At first a small

⁸² Lee Bronson Skinner, Fruit-Drier, US Patent 1049930 filed September 26, 1912 and issued January 7, 1913. <https://patentimages.storage.googleapis.com/be/87/ce/e09617ea5dafd1/US1049930.pdf>. [accessed July 11, 2017]

⁸³ Lee Bronson Skinner, Fruit-Drier, US Patent 1214234 filed April 12, 1916 and issued January 30, 1917. <https://patentimages.storage.googleapis.com/17/fa/d2/360c205f83aeea/US1214234.pdf>. [accessed July 11, 2017]

⁸⁴ Lee Bronson Skinner, Fruit-Sizer, US Patent 1071472 filed May 16, 1913 and issued August 26, 1913. <https://patentimages.storage.googleapis.com/8b/73/a1/45d29ede3700b1/US1071472.pdf>. [accessed July 11, 2017]

machine shop in 1909, the L.B. Skinner Manufacturing Company incorporated in 1913, and by 1924, Skinner's plant covered over four acres and had its own foundry and warehouse. The business employed 150 men with a total annual payroll exceeding \$200,000 (close to \$3 million in 2018). By then, the company had diversified immensely and stood as a testament to the utilization of machinery to quickly process produce. The largest factory in the world for the manufacturing of fruit and vegetable packing machinery, Skinner's citrus-packing outfits were shipped not only throughout Florida but were sent domestically to California and internationally to Spain, South Africa, Palestine, Brazil, and as far away as New Zealand. Manufactured from pig iron and rough lumber, these machines were made, not just assembled, from raw materials on site. Besides machines for the washing, sizing, grading, and packing of citrus fruits, L.B. Skinner Manufacturing Company sold other citrus grove accessories like picking ladders, picking bags, and even coke heaters to protect groves from freezing temperatures. The company also sold machines to process other fruits and vegetables including apples, peaches, cucumbers, and tomatoes.⁸⁵ Active in the Florida State Horticultural Society and the Growers and Shippers League of Florida, and a strong advocate for larger marketing efforts, L.B. Skinner used his influence to attract railroad facilities to Florida to enhance its citrus exports. He remained active in the citrus industry until his death in 1936, when his son took control of the renamed Florida Citrus Machinery Company and kept alive the Skinners' influence in mid-century Florida citrus

⁸⁵ "Skinner Plant The Largest," *Dunedin Times*, February 7, 1924, 15. Throughout the 1910s and 1920s, L.B. Skinner Manufacturing Company advertised in newspapers to cities in Florida's citrus region like the *Orlando Evening Star*, *Orlando Sentinel*, and *Tampa Bay Times*. Some examples of these advertisements are "How Much Per Box is Your Packing Cost?" *Orlando Evening Star*, August 29, 1918, 3; "Skinner 'Satisfaction Guaranteed' Citrus Packing House Machinery," *Orlando Sentinel*, July 11, 1916, 6; "Real Frost Protection with Skinner Coke Heaters," *Orlando Sentinel*, November 30, 1922, 3.

affairs.⁸⁶ Nevertheless, L.B. Skinner's role in mechanizing the Florida citrus industry represented a crucial aspect to its modernization in the early 20th century. By the 1910s, Skinner's citrus packing machines were shipped to dozens of packinghouses in Florida and California.⁸⁷

As L.B. Skinner's machinery streamlined the overall processing of citrus, Florida growers and packers redesigned their packinghouse facilities to accommodate such machinery. Originally, packinghouses were simple wood-frame barns built near groves, but by the 1920s, packinghouses were built with less wood and more steel, resembling warehouse more than a homely farm building. Packinghouses were surrounded by auxiliary buildings that separated supplementary operations from their main packing activities, and they were relocated to sites near railroads and highways to facilitate the transportation of fruits. In all, these packinghouses became larger, stronger structures specifically designed to prepare massive amounts of citrus fruits for markets abroad as efficiently as possible. Three extant packinghouses built in the 1920s testify to this expansion in size and accommodation for machinery, and their histories and architectural designs clearly indicate mechanization's influence in the development of the early-20th-century Florida citrus industry.

Growers and packers built more utilitarian packinghouses meant to outsize and out-process competition. This extensive change in design was a strong indicator of agricultural

⁸⁶ An advocate for the idea of citrus concentrate, Bronson Cushing "B.C." Skinner founded Citrus Concentrates, Inc. (CCI) in 1935 and experimented with making concentrate products. During WWII when German U-Boats blocked maritime trade routes, the United Kingdom financed CCI for a \$1.1 million concentrate plant in Dunedin to produce concentrate. By the end of 1944, CCI shipped over 28 million cans of concentrate and earned \$4 million. Knupp, "Dunedin's Citrus History."

⁸⁷ "Dunedin Packing Center of the State," *Orlando Sentinel*, June 7, 1914, 8; "The citrus exchange at Umatilla," *Orlando Sentinel*, June 18, 1914, 2.

industrialization; large, capital-intensive citrus operations began replacing the groves of Florida's small citrus farmers. Arguably the best example of this design change is seen with the Bob White packinghouse, the crown jewel to a once-thriving citrus complex located northeast of De Leon Springs in Volusia County.⁸⁸ It was owned by Theodore Strawn, originally from Illinois who also followed his family into Florida and got involved in citrus farming by 1897. Strawn assembled large citrus holdings over two decades; his formula to success was utilizing his capital to rehabilitate groves that other growers could not make profitable. By 1909, he established citrus packing operations and his own brand, "Bob White," with the eponymous quail as its mascot. He first worked out of a tent, moving from grove to grove boxing oranges, but eventually he constructed his own two-story, wood-frame packinghouse within DeLeon Springs. By 1912, Strawn cultivated nearly 100 acres of citrus groves and shipped 20,000 boxes of oranges annually. After this first packinghouse was destroyed by fire, Strawn bought land northeast of town and extended a railroad spur from the Atlantic Coast Line to the tract. Contracting with the Truscon Steel Company of Youngstown, Ohio, his second packinghouse was manufactured, shipped in sections by rail, assembled and then set upon its poured concrete foundation. This second prefabricated fireproof packinghouse was completed in 1921 at a cost of \$75,000 (over \$1.8 million in 2018).⁸⁹

Still standing despite being out of operation since 1983, Strawn's packinghouse is one of the best representations of the more industrialized direction taken by the Florida citrus industry by the 1920s. It was added to the National Register of Historic Places in 1993. Measuring 142' x

⁸⁸ Strawn Citrus Packing House District, De Leon Springs, Fl., National Register of Historic Places #93000931 received August 11, 1993 and added September 13, 1993, Section 7, 1.

⁸⁹ Ibid, Section 8, 1-2.

78' at its base and equating approximately 5,000 square feet of floor space, this two-story, “‘fireproof,’ vernacular metal-frame packinghouse” is composed of a steel skeleton covered in copper alloy steel panels. Its most distinctive feature is its “tri-partite saw-tooth roof.” Along with large sets of fixed and pivot wire glass windows, this unique roof design maximized the distribution of natural light within the packing house’s interior, an architectural feature that lowered electricity usage and costs.⁹⁰ Multitudes of steel trusses support the roof and walls of the packinghouse, visible structural components more characteristic of an industrial plant or warehouse than even a large farming operation in the early 20th century. The original equipment for Strawn’s packinghouse was installed while the building was constructed. Some of these machines were supposedly built by Strawn himself, but most were products of the Skinner Machinery Company.⁹¹

Besides being constructed with more space, with more resilient building materials like steel, and with design choices stressing utility and efficiency, these structures mimicked industrial facilities in their need to have subsidiary buildings. To bring order in overall activity and to remove supplementary but necessary work from the main packinghouse floor, various structures surrounded the packinghouse to perform such specialized activity, making packinghouses more self-sustaining in their operations. For Theodore Strawn’s packinghouse, an engine house located twenty feet east historically served as the power plant for the complex. It contained a forty-horsepower steam boiler and dynamo that drove its machinery; a drive shaft

⁹⁰ Ibid, Section 7, 1-2.

⁹¹ Ibid, Section 7, 2; Section 8, 2; photos 2-3, 11-15. Vandals have stolen or destroyed most of the original equipment, but remnants of the machines were identified, along with the belts, shafts, and pulleys used to power machines when this building was added to the National Register of Historic Places in 1993. For more recent pictures, see David Bult, “Strawn Citrus Packinghouse District,” *Abandoned Florida* website. <https://www.abandonedfl.com/strawn-citrus-packing-house-district/>. [accessed January 18, 2018]

connected this engine room with equipment through a tunnel in the packinghouse's poured concrete floor. The box house, where field and shipping crates were assembled, also stood separate from the packinghouse along with a water tower that was reassembled from Strawn's first site to serve his second packing facility. Between 1922 and 1923, several additional outbuildings were completed, including a fertilizer house, a tire shop, and a blacksmith shop, giving the building complex the look of a fruit manufacturing plant, not a fruit farm.⁹²

Theodore Strawn's choice to mechanize reaped huge dividends. His "Bob White" and "Intrinsic" brands were renowned nationally and across the Atlantic Ocean; by 1925, Strawn's markets included restaurants and stores in Great Britain. The complex was expanded further by his heirs with the construction of a new office building in 1926 and new storage buildings, 1,000-gallon water tanks, and a "grease rack" or garage where farm vehicles were serviced by the 1940s. The postwar increase in demand for commercial orange juice prompted further additions in subsidiary structures, making the citrus complex factory-like in its layout.

While the Strawn packinghouses epitomizes industrialization in Florida's early-20th-century citrus packinghouses, it is not the only historic example. Throughout the 1920s, packinghouses continued to be designed to accommodate machines and specialized subsidiary structures. Another such structure embodying these ideals entering the citrus process is the Marion S. Whaley citrus packinghouse, located west of US Route 1 in Rockledge, a community that once was a hub for packing the renowned Indian River citrus.⁹³ Built in 1929, this packinghouse's namesake was a prominent Rockledge fruit grower; he selected the site of this

⁹² Ibid, Section 7, 2-3; Section 8, 2-3; photos 6-8.

⁹³ Marion S. Whaley Citrus Packing House, Rockledge, Fl., National Register of Historic Places #93000286 received March 8, 1993 and added April 8, 1993.

packinghouse between US Highway 1 and the Florida East Coast Railway to make transportation to and from the packinghouse accessible for railroad shipment and for tourists on the Dixie Highway. Throughout the 1930s, it was an integral component to the area's citrus operations and eventually becoming one of the oldest continually-operating packinghouse along the Indian River.⁹⁴ Though not a steel, fireproof structure like Strawn's packinghouse, its interior resembled the layout of a factory; various segments of the building serve specific functions in the processing of citrus fruits.

Outside, the Whaley packinghouse looks like a large barn, a design typical to many packinghouses in Florida at the time.⁹⁵ Constructed of heart of pine lumber known as "Merritt Island Mahogany," the main block is rectangular with a metal pitched gable roof. Despite its humble exterior, its interior is more industrialized in design. To create more space within the packinghouse to its auxiliary buildings, one story extensions spread from the ends of the building. On its south end, a cross-gabled addition with glassed-in porches was built to house its main office and its gift shop, where a loading bay to the rear of this office was used to market wholesale fruit to the many tourists traversing Florida's Atlantic Coast by car or train. At its north end, another gabled extension stretches to a large concrete block storage shed used to house trucks, wagons, and other supplies.

⁹⁴ Ibid, Section 8, 1, 3. This packinghouse's name changed by the Sullivan Brothers to "Victory Groves" during WWII to reflect the patriotic part the business played in the war effort. This brand name is still painted on the wall of the concrete block storage shed north of the packinghouse.

⁹⁵ The exteriors of many citrus packinghouses in early-20th-century were wood-framed, one-story barns with gabled roofs. For examples, search the Florida Citrus Photographs Collection online for dozens of images of Florida packinghouse exteriors. Florida Citrus Photographs Collection, McKay Archives Digital Collections, Florida Southern University, Lakeland, Fl. <http://cdm15558.contentdm.oclc.org/cdm/>. [accessed July 30, 2017].

Like its counterpart in De Leon Springs, the main block of the packinghouse was used to sort, grade, and pack Indian River fruit. It was the center of activity despite looking unfinished; exposed rafters and studs make up the walls and the floor is of unfinished pine, but this appearance of incompleteness signifies utility. Space, rather than more walls, was needed in the main block so workers could move, work, and operate machinery at full capacity.⁹⁶

The packinghouses that were once common sites in the towns and rural areas of Central Florida were often like the one built for Marion S. Whaley, in appearance and especially in their location by railroad tracks or roads. As private citrus growers like Strawn and Whaley began building more modern packinghouses throughout Florida's citrus belt, citrus farmer cooperatives like the Florida Citrus Exchange also began to expand and build newer packing facilities.⁹⁷ An extant survivor of this cooperative's packinghouses stands in Auburndale, and though unusual in appearance in comparison to its counterparts, it still was a facility that mechanized to be competitive against neighboring citrus growers.

The Auburndale Citrus Growers Association was among the first citrus associations in Polk County to join the Florida Citrus Exchange as a sub-exchange. Acquiring 1.5 lots along the Atlantic Coast Line Railroad, the association built a small wood-frame packinghouse in 1910, the first of several packinghouses in Auburndale.⁹⁸ By 1922, the Association expanded its facility considerably and purchased an adjacent city block, completing a new brick packinghouse

⁹⁶ Marion S. Whaley Citrus Packing House, National Register of Historic Places #93000286, Section 7, 1-3; photos 7-12.

⁹⁷ The largest citrus cooperative in the state, the Florida Citrus Exchange, is discussed more in Chp. 4.

⁹⁸ Auburndale Citrus Growers Association Packing House, Auburndale, Fl., National Register of Historic Places #97000794 received June 19, 1997 and added July 17, 1997. Section 8, 3. Leon Kirkland owned a larger wood frame packinghouse northwest of the ACGA and Chase & Company owned a smaller facility southwest of Kirkland's packinghouse.

that measures 120 feet long and 60 feet wide. A railroad spur extended from the main line to utilize the loading platform on the building's north side. To follow the architectural trends of the time, the exterior of the packinghouse is in the Spanish Mission-style. With its characteristic curvilinear parapet gabled ends and clay tile walls, the main building looks like it was transplanted from a Spanish colonial town in Mexico.⁹⁹ Its interior was far more industrial in appearance; the packinghouse has a steel truss roof supported by brick pillars with loading bays lining its north side. Between 1924 and 1929, a large wooden extension was added for refrigerated storage. The building doubled in size with the addition of an office and more loading bays in the rear of the packinghouse by 1930. For increased railroad accessibility and to speed the movement of fruit out of the complex, a wooden shed roof platform was extended from the loading bays to railroad siding along the main track of the Atlantic Coast Line railroad.

Like its privately-owned counterparts, the Auburndale Citrus Growers Association packinghouse contained an assembly line of machines. Conveyors, washers, dryers, and waxers snaked through the building. It also hosted multiple ancillary buildings, including a two-story front office space, the one-story refrigerated storage house, wood-frame sheds, and a water tower to support its operations.¹⁰⁰ The largest employer within town limits in the 1920s and 1930s, the Association faced financial difficulties in the late 1930s caused largely by competition from larger, more efficient packinghouses. After the Association abandoned the location by 1940, their chief competitor, Adams Packing Association, Inc., bought the packinghouse in 1942. Adams Packing Association was established in 1911 by C.W. Adams, a wealthy dentist from Detroit, Michigan, who came to Polk County. He built a massive packing facility south of

⁹⁹ Ibid, Section 8, 3; photos 1-2.

¹⁰⁰ Ibid, Section 7, 1-2; Section 8, 3-4.

Auburndale in 1926, and after acquiring the former Association site, he removed all machinery from it to install at his larger packinghouse and used the structure as a coloring room and storage space until the early 1950s.¹⁰¹

Whether private or public in their ownership, Florida packinghouses began to accommodate for and utilize machinery extensively. Though not actually manufactured each orange, grapefruit, and other citrus fruits, like cars and other factory products, were processed on an assembly line. By the 1920s, mechanization became a necessary trend for growers and packers to follow in order to survive and gain ground in the Florida citrus industry. The means to obtain sufficient capital to buy this needed equipment altered the identity of the industry by the mid-20th century, for small, family-run citrus farms could not purchase the machinery needed to compete independently against the large-scale, corporate citrus farms that dominated the industry after WWII.

However, the industry could not fully mechanize. Especially during harvest, human labor was still an essential resource for the operation of the Florida citrus industry. The next chapter shows how the tasks and lives of these workers in the industry seemed to modernize very little, especially in comparison to the scientific and mechanic ingenuity that intensively overhauled Florida citrus production in the early 20th century.

¹⁰¹ Ibid, Section 8, 4.

CHAPTER FOUR: LABOR

Science and mechanization became integral characteristics of the early-20th-century Florida citrus industry, but new inventions did not change all stages of work in the groves and packinghouses. Neither scientists nor inventors could create contraptions that replaced the effectiveness of human hands for picking the fruits of citrus trees. While mules and then tractors were used for essential tasks in the groves that needed power, like plowing and pulling wagons to and from the fields, the harvesting of citrus was accomplished with manual labor. From early autumn to late spring, hundreds of farm workers in the early 1900s, both local and migrant laborers, handpicked Florida's citrus fruits. Many workers also still worked in packinghouses, culling, sorting, packing, and operating the machinery necessary to prepare fresh citrus fruit for transit to markets and cities throughout the US.

This chapter examines the labor force of the early-20th-century Florida citrus industry. It is a topic directly linked to race and segregation that characterized and coincided with life in Florida during these decades. Florida blacks lived under all the limitations associated with the Jim Crow South, but they found ways to own property, engage in the citrus market on their own, as well as labor in the groves of more substantial white growers. These African American citrus laborers who worked and farmed their own citrus groves exemplified small farm republicanism in Florida. Henry Knight wrote of this in *Tropics of Hope*, suggesting that in the late 1800s “republican renewal” was being projected onto different landscapes as a result of industrialization in the northeast US. Envisioning the nation as a haven for yeoman farmers, an identity advocated by founding father Thomas Jefferson, boosters and realtors heavily promoted Florida for their agricultural potential during the late 19th and early 20th centuries. Small,

independent, virtuous farmers whose successful cultivation of the land symbolized “true manhood and statesmanship” defined the republican ideal. This ideal was used by land developers to attract white independent farmers, especially white Northerners and Midwesterners, to immigrate to Florida and establish farms that helped bolster the state’s economic growth and development.¹⁰² Though white Northerners came into Florida seeking winter homes, new business ventures, and to try their luck in the burgeoning citrus industry, white and black Southerners also came to the southernmost state for better jobs and business opportunities. For African-Americans moving to Florida from other Southern states, the small independent farming promoted in the state seemed to offer a degree of economic freedom denied to them in other Southern states. Instead of being trapped in perpetual debt through sharecropping and crop lien, Florida held out the opportunity to build self-sustaining farms, create black farming communities, and hold wage-earning positions as farm laborers.

Florida offered year-round employment for farm laborers because several crops were grown and harvested annually in its temperate climate. This meant lots of work in Florida for agricultural laborers, and thousands of migrant workers flooded into the peninsula for the winter harvest seasons, including the picking of citrus crops. Citrus growers needed extra laborers to help them during harvest time. They preferred African-American agricultural workers to harvest citrus fruit in the early 20th century. This preference directly stemmed from the color of their

¹⁰² Henry Knight, *Tropic of Hope: California, Florida, and the Selling of American Paradise, 1869-1929* (Gainesville: University of Florida Press, 2013), 83, 103.

skin. Race played a significant and critical role in Florida's agricultural production as it did everywhere else in the South.¹⁰³

Examples of racial segregation were seen in groves and packinghouses in west Orange County. Packinghouses were spaces where whites, often white women, worked. The presence of white women in the workspace of packinghouses precluded the use of black labor in much the same way that blacks did not work in cotton mills where women worked. Pictures from the South Lake Apopka Citrus Growers Association (SLACGA) in Winter Garden captured the segregation of white and black laborers. White workers were the only ones who worked at the SLACGA packinghouse in the 1920s. In a 1924 photograph taken outside the packinghouse along the railroad tracks, over forty adult male and female workers posed with a refrigerated railroad car in the background. Identified as packinghouse workers, all were white.¹⁰⁴ Besides not allowing African-Americans to work in the some packinghouse, others were not allowed to join company picnics. This was seen in a picture from an SLACGA picnic in the 1920s (Figure 1). Hosted along the shore of Lake Brim in Winter Haven behind the home of Luther Tilden, over sixty white men, women, and children posed at the picnic under the oaks along the lakeshore. No African-American was seen in this picnic photo either sitting near the front or hiding in the back.¹⁰⁵

¹⁰³ Nano Riley, *Florida Farm Workers in the 21st Century* (Gainesville: University of Florida Press, 2002), 8; Gilbert King, *Devil in the Grove: Thurgood Marshall, the Groveland Boys, and the Dawn of New America* (New York: Harper Collins, 2012), 77.

¹⁰⁴ *Packinghouse workers pose outside SLACGA building, May 1924, Shipping Gold* photographic exhibition binder, Citrus Collection, Winter Garden Heritage Foundation (WGHF), Winter Garden, Florida.

¹⁰⁵ *SLACGA picnic, circa 1920s, Shipping Gold* photographic exhibition binder, Citrus Collection, WGHF.



Figure 1: Packinghouse Workers of South Lake Apopka Citrus Growers Association, 1920s. Winter Garden Heritage Society, Winter Garden, Florida.



Figure 2: Field Workers of South Lake Apopka Citrus Growers Association, 1929 Windermere, Florida. Winter Garden Heritage Society, Winter Garden, Florida.

However, in a 1929 photograph taken at the Cox orange grove located along Lake Crescent in Windermere, thirty black hired seasonal workers posed with two white overseer employees from the SLACGA, a photograph that showed the perceived place of blacks in the Florida citrus industry, doing the difficult job of harvesting under the watchful eyes of white foremen (Figure 2). Within the picture were the tall wooden ladders that enabled workers to climb into the trees and “Allen bags,” canvas bags that opened at the bottom so picked fruit could drop into wooden field crates, which in turn were loaded onto a truck or wagon and taken to the packinghouse. Also pictured with the workers, the wooden field crates could carry a hefty amount of fruit, around 90 pounds of oranges, 85 pounds of grapefruit, and 95 pounds of tangerines.¹⁰⁶ Fruit pickers had a tough, backbreaking task. Not only was their work characterized by repeatedly climbing, picking, carrying, and emptying hundreds of pounds of fruit a day, but pickers had to be consistent and reliable as they toiled, making sure fatigue did not lead to sloppy work. A small cut or bruise on one fruit could fester into rot that could spoil a whole crate. Foremen watched and controlled the work of the pickers. Fruit pickers were not paid hourly for their work; they were paid by their productivity, earning a dime or less for every crate they picked, which roughly equaled \$1.50 per crate in 2018. In 2016, citrus pickers were guaranteed an hourly wage of \$10.70 and earn more if they were fast pickers.¹⁰⁷

These pictures from the SLACGA showed a common occurrence taking in packinghouses throughout Florida; whites worked inside and blacks worked outside. But other

¹⁰⁶ *South Lake Apopka Citrus Growers Association employees and hired seasonal workers, 1929, Shipping Gold* photographic exhibition binder, Citrus Collection, WGHF.

¹⁰⁷ Dan Charles, “Guest Workers, Legal Yet Not Quite Free, Pick Florida’s Oranges,” *National Public Radio*, January 28, 2016. <https://www.npr.org/sections/thesalt/2016/01/28/464453958/guest-workers-legal-yet-not-quite-free-pick-floridas-oranges>. [Accessed Sept. 1, 2018].

pictures do show blacks and whites working together in SLACGA packinghouse. One photograph of the SLACGA packinghouse interior shows an African-American man and woman standing among white workers in front of sorting bins, making shipping crates and packing the crates with oranges.¹⁰⁸ It is uncertain if the two individuals were packers working the same job as their white counterparts or if they engaged in some other activity and were merely posing for the picture. For African Americans, there was a difference between working in the same building and holding the same job. Another photograph from 1935 showed both white and black workers posing with the white packinghouse manager, standing in front of the loading dock stacked high with wooden field crates.¹⁰⁹ However, photographs from other citrus associations near Winter Garden clearly showed that white employees carried out the packinghouse jobs well into the 1950s. Pictures of employees working for Roper Brothers Inc., John T. Fuller, and Heller Brothers Packing Company depict all-white ensembles making up the packinghouse crews at these businesses.¹¹⁰ Because these packinghouses were small, privately owned operations, worker placement was influenced not only by the owners' preferences but by the size of the operation.

Even in work confines that were not segregated, trouble brewed between white and black workers. This was seen in August 1919 at Isleworth, a large grove south of Windermere set along the Butler Chain of Lakes and owned by Chase & Company in Sanford.¹¹¹ In August 1919,

¹⁰⁸ *Interior of South Lake Apopka Citrus Growers Association*, circa 1920s, *Shipping Gold* photographic exhibition binder, Citrus Collection, WGHF.

¹⁰⁹ *Photo of packing crew at South Lake Apopka Citrus Growers Association packinghouse*, circa 1935, *Shipping Gold* photographic exhibition binder, Citrus Collection, WGHF.

¹¹⁰ *Crew outside Roper Brothers packinghouse*, 1926; *Workers from the John T. Fuller Packinghouse*, circa 1915-1920; *Heller Bros. Packing Co.-Winter Garden, Florida*, April 30, 1952, *Shipping Gold* photographic exhibition binder, Citrus Collection, WGHF.

¹¹¹ See Chapter 5 for more on Chase & Co.

overseer A.Q. Lancaster wrote to Randall Chase about a fight that took place at Isleworth between a 13-year-old white worker and a black worker. “Lawrence Watkins (white), James Davis (colored) both came from Ga. [Georgia]... had a fight this morning with shuffle hoes. Watkins cut Davis on the leg slightly, and Davis struck at Watkins’ head and he threw up his hands and the hoes struck both his hands and cut him bad. We taken [sic] Watkins to the hospital in Orlando and Davis is in jail at Orlando.” Lancaster noted, “Davis ran when he struck Watkins, and as soon as we got Watkins started to the hospital we got our guns and started to capture Davis, and made quite a search before we found him.”¹¹² Ten days later, Watkins’ concerned father came to Randall wanting to know if they could help him out in anyway. Randall was told that the boy, who suffered irreparable damage to his hands, was ready to leave the hospital if the father could find a place to take him, but Lancaster refused “to let the boy or the negro come back on the place.” Though he did not want to give Watkins’ father any money, Randall told of a friend in Orlando that could see if “it might be possible for him to obtain board for himself and son at Windermere and work on the grove during the day.”¹¹³ Randall confirmed with Lancaster that “this arrangement was only to be temporary, and I doubt if the boy would be able to move for three or four weeks, and I do not think... he would give you give you any trouble at first.” Randall said, “... Chase and Company would be responsible for the hospital bill.”¹¹⁴ Though this fight did not admit that a black worker would receive the same treatment if put in the similar situation, this conflict did show that citrus workers could seek help and reparation from their

¹¹² A.Q. Lancaster to Randall Chase, Aug. 9, 1919, box 49, folder 20.83, Chase Collection, Special and Area Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida.

¹¹³ Randall Chase to Joshua Coffin Chase, August 9, 1919: box 49, folder 20.83, Chase Collection.

¹¹⁴ Randall Chase to A. Q. Lancaster, August 9, 1919: box 49, folder 20.83, Chase Collection.

bosses. Because some growers provided housing for their workers, some felt responsibility for their employees' well being, hoping to retain them for future seasons.

Citrus growers tried to pay their wages based on the perceived difficulty of a job. This was evident in the packinghouse, where there were packers who carefully filled citrus crates for shipment, sorters who picked out culls and sorted by size, strippers who made the metal bands that held crates together, and nailers who attached the wood and strips to make citrus crates. Because they had to be observant and precise packing fruit into crates for safe transit, packers were paid more than sorters, nailers, and strippers. A 1918 Labor Report by the Sanford Board of Trade showed that Florida citrus growers agreed to set maximum wage scales for each position. Besides noting that "union" sentiment percolated among laborers, the report set the maximum pay on a ten-hour day for packers, sorters, nailers, and strippers, capping daily wage at \$2.75, \$1.75, \$2.25, and \$.25 respectively. If these standards were applied in 2018, packers received \$46 per day while strippers earned \$4. Pay was determined by the position, but a worker's position and pay were also determined by their gender. This labor report showed that men and women could work as packers and sorters, but women earned a dollar less than men packing and twenty-five cents less sorting. Only men and boys were allowed to be nailers. Women were employed to make metal strips, but they were paid seventy-five cents less than boys under eighteen years of age doing the same work.¹¹⁵

There were wages based on position, age, and gender, but wage disparity also existed between white and black citrus workers. This can be seen in data from Isleworth. Between October 1932 and November 1933, thirty-nine white people lived on the Isleworth property

¹¹⁵ Sanford Board of Trade Labor Committee, 1918 Labor Report, Box 14, Folder 15.59, Chase Collection.

working for Chase & Co.; they included ten families and one single worker. For most of each year, especially fall and winter, individuals worked at harvesting and packing citrus for sale, but work slowed down by late spring and the whole of summer. Within that time frame, \$4,093.59 dollars were paid to seven of those families that included four or more people. The company recorded a mean amount of \$585.79 being paid to each of these families annually. In other words, each white individual living on the property was recorded to have earned \$141.15 annually or \$11.23 weekly.¹¹⁶ In the same year, there were twice as many black workers living at Isleworth. Seventy-eight “colored” workers plus their families worked and lived at the grove, and only two couples and four workers worked but did not live at Isleworth. There were four single black male workers and seventeen families living on the property, which in total made up thirty-five men, twenty-four women, and thirty-eight children. Despite the larger number of black workers, only twenty-four of them were considered wage earners by the company, twenty of them being family wage earners. In total, Chase & Co. paid its black workers at Isleworth a total of \$8,385.91. Though the total sum to black workers was double the amount paid to white workers, this salary resulted in a pay of \$349.31 annually to each individual worker, just over half of what was paid to Isleworth’s white workers on a weekly basis.¹¹⁷ Despite making up two-thirds of the workforce at Isleworth, black workers with big families were still paid less than the white workers that had smaller families to support and feed. The lower sum might have just been the result of black laborers holding lesser-paying, menial positions, but though there is no consecutive employment record as evidence to show who and who did not return to Isleworth

¹¹⁶ “Census of White People Living and Working at Isleworth Grove with Earnings, October 31, 1932-November 1, 1933,” Chase Collection, RICHES Mosaic Interface (RICHES), University of Central Florida, Orlando, Florida. <https://richesmi.cah.ucf.edu/omeka/items/show/1593>. [accessed February 13, 2018].

¹¹⁷ “Census of Negroes Living and Working at Isleworth, October 31, 1932-November 1, 1933,” Chase Collection, RICHES. <https://richesmi.cah.ucf.edu/omeka/items/show/1594>. [accessed February 13, 2018].

every year, one should not that black laborers had mobility. They left old jobs to work for other citrus growers and packinghouses for better wages.

Besides dealing with segregated workplaces and unequal pay, African-American farm workers in Florida dealt with a shocking amount of racial violence. Between 1882 and 1930, African Americans in Florida suffered the highest lynching rate in the United States relative to its population size. At least 266 blacks were lynched in this period, and whites also destroyed black towns, raped black women, and drove blacks out of parts of Florida. The 1920s proved especially problematic for African Americans in Florida with several examples of racial violence that attracted national notice, with the two most infamous examples being the 1920 Ocoee Riot and the 1923 Rosewood Massacre.¹¹⁸ However, despite violence and a segregated society, the black experience in Florida was atypical to other southern states because African Americans had a notable chance to become landowners in the state. In fact, the percentage of black landowners in Florida was far higher than the rest of Deep South. Blacks not only more likely to be wage earning farm laborers than sharecroppers; they had the chance to own and operate their own farms than they did in Alabama and Georgia.

In “The Negro Farmer,” W.E.B. Dubois examined the statistics of African American farmers recorded in the 1900 census. He divided black farmers by two classes, those who were operating farms that they themselves owned, and those who operated farms that were owned by others. Farms operated by owners, part owners, and owners and tenants were regarded as constituting owned farms, and those operated by cash or share tenants constituted unowned or

¹¹⁸ Paul Ortiz, *Emancipation Betrayed: the Hidden History of Black Organizing and White Violence in Florida from Reconstruction to the Bloody Election of 1920* (Berkeley, University of California Press, 2005), 61, 214-223, 232.

rented farms. Of the 746, 715 farms worked by African Americans in 1900, blacks owned 25.2 percent of the total, 74.6 percent of the total were rented, and black managers operated the remaining 0.2 percent. Of the farms owned by blacks in Florida, 21 percent were owned outright, and 4.2 percent were partly owned.¹¹⁹ In other words, about one-fourth of all black farmers had become landowners forty years after emancipation, but they were not equally distributed across the state. Most black farmers lived in what was Middle Florida (Jackson, Gadsden, Leon, Jefferson, and Madison counties), but black farmers operated many farms in North Central Florida, including 35-45 percent of the farms in Columbia, Alachua, and Marion counties.¹²⁰

In Florida, the percent of black-owned farms compared to other states was relatively high. Because of the greater ability to acquire fertile land in the newly settled state, 48.4 percent of Florida's black farmers owned land by 1900. Like many former Union and Confederate soldiers, immigrants, and winter tourists, African Americans came to Florida wanting a fresh start, to invest in land so that they could start new farms and financial ventures. Some of Florida's earliest black farmers obtained land through the Southern Homestead Act between 1866 and 1876. Others acquired land through private sales that required complicit white intermediaries who bought the land and resold it to black farmers. Obtaining the land and retaining it required careful family strategies in order to avoid financial risks, yet Florida offered African Americans more opportunities for economic stability via agriculture than other states in the Deep South. Though Florida had a percentage of black population (43.7 percent of total population) almost as high as that of Georgia (46.7 of total population), nearly half of Florida's

¹¹⁹ W.E.B. Dubois, "The Negro Farmer," in *Negroes in the United States* by William Chamberlain Hunt, Walter Francis Wilcox, and W.E.B. Dubois (Washington D.C.: U.S. Government Printing Office, 1904), 69, 78.

¹²⁰ Charles E. Hall and Z. R. Pettet, *Negro in the United States, 1920-1932* (Washington, D.C.: United States Government Printing Office, 1935), 571.

black farmers owned or at least partly owned the land they farmed compared to a meager 13.7 percent of landowners among Georgia's black farmers.¹²¹ Out of Florida's 13,521 farms operated by African Americans, black farmers owned 6, 551. The majority of these farms, 48.9 percent were on twenty to fifty acres of land.¹²² Small acreage characterized the landholdings of Florida's black farmers but provided them an independence not afforded in other southern states.

But out of these African American-operated farms in Florida, only a sliver of black-operated farms was recorded in the 1900 census as farms that mainly grew fruit. The majority (42.2 percent) derived their income from growing cotton, 33.8 percent from farming miscellaneous products, and only 1.3 percent from growing fruit. There were only 182 black farms that primarily grew fruit compared to the 5,703 farms that grew cotton in Florida.¹²³ As the industry reemerged at the century's turn, African-Americans did not play a substantial role as stand-alone growers in Florida citrus, but ownership among black-operated Florida farms remained relatively stable. In 1910, 49.6 percent of all black farmers in Florida owned their farms, and 48.8 percent owned their farms in 1920. In neighboring states, only 18 percent of black farmers in Alabama owned their farms, and just 12.3 percent of black farmers owned their farms in the 1920 census.¹²⁴ In 1930, right after the depression set in, 39.5 percent of black farmers in Florida fully owned the land they farmed on, but full landownership for black farmers

¹²¹ Ibid, 81-82.

¹²² Ibid, 298-299.

¹²³ Ibid, 301, 325.

¹²⁴ U.S. Department of Commerce, *Fourteenth Census of the United States Taken In The Year 1920*, Agriculture, Vol. 5 (Washington, D.C.: U.S. Government Printing Office, 1922), 321.

in the state improved back to 49.8 percent by 1940. For black farmers in Alabama, full land ownership was 16 percent, and in Georgia, it was just 14.6 percent in the 1940 census.¹²⁵

While the majority did not farm citrus, many African-Americans came to Florida and successfully began to own land and farm. Under the continued rule of Jim Crow, both African American farmers and farm laborers in Florida actively fought against exploitation and indignity. In *Emancipation Betrayed*, Paul Ortiz explored the way black Floridians organized and resisted abuses and suppression by whites to better defend themselves and their families and to also exercise their constitutional rights as equal citizens. From opposing the segregation of public services to fighting for their right to vote unhindered, African Americans fought for their economic rights, which was the case for black agricultural workers in the 1910s. These workers organized strikes expecting social and economic justice.¹²⁶ For instance, on November 5, 1919, The *Palatka Daily News* reported that black orange pickers of the Sawyer & Godfrey packinghouse in Crescent City “went on strike demanding 10 cents per box for picking.” Though packinghouses were offering 7 to 8 cents per box, the pickers grumbled and demanded 10 cents straight, “making the packing house managers of Crescent City... get together and establish a price for first and second pickings. In case the demand is not satisfied by the price established, the packing houses will close down.” The paper blamed “walking delegates from labor organizations in the north...[for] sowing the seeds of discontent and bolshevism among the negroes of Florida,” but it argued that any perceptible increase over the present wage would do the workers little good. “The packers will resist, and they can afford to wait.” The paper also

¹²⁵ U.S. Department of Commerce, *Sixteenth Census of the United States: 1940*, Agriculture, Vol. III (Washington D.C.: U.S. Government Printing Office, 1943), 218.

¹²⁶ Ortiz, *Emancipation Betrayed*, 162.

noted, “There is such a thing as crowding the mourners too far, and any attempt to force a further increase in wages this year will be met in a decisive manner. The next time wages change... will be with a downward, rather than an upward slide.”¹²⁷

Many whites blamed such labor strife on “outside agitators.” Democratic Party newspapers blamed labor unions and Republican political forces for orchestrating these strikes and attempting to organize black farm labor in the South. However, black farm laborers demonstrated a united effort to demand higher wages. African American farm workers were battling to raise their hourly rates not just in Crescent City but in other parts of Florida. They knew that the relative labor shortage caused by the Great Migration, which began in the mid-1910s, gave them an advantage in negotiations because whites had to pay black laborers more to stay in Florida. White growers felt increasingly threatened by organized black labor efforts, interpreting them as part of a greater nationwide labor movement to shorten the workweek, unjustifiably increase worker pay, and thus divide their profits that were already dwindling from shortened work days.¹²⁸ But as Cindy Hahamovitch noted one should not accept at face value the concerns of employers, growers, or state agricultural agencies when regarding the “conditions” of the labor market. The buying and selling of labor in the South had always been intimately bound up with notions of race. Rather than the Great Migration alone causing the large black labor shortage, Hahamovitch noted that any decline in the pool of labor, even if the decline was small and insignificant, was considered a “labor shortage” if African American workers were

¹²⁷ “Orange Pickers May Strike For More Pay,” *Palatka Daily News*, November 5, 1919, 3.

¹²⁸ Ortiz, *Emancipation Betrayed*, 162-163.

paid higher as a result of change.¹²⁹ Many white growers blamed labor problems on escalating union activity, but their pushback against black farm workers' demands was motivated by racism.

In Crescent City, packinghouse managers gathered and agreed to “compromise with the demand of workers” and pay pickers 8 cents per box, arguing “pickers can make from \$4.50 to \$6.00 a day... good living wages for laborers.”¹³⁰ This action came due to fear over a union formation among their workers. Packinghouse owners and managers held a meeting in Miami to determine a response, declaring that practically all fruit and vegetable houses in Central and South Florida would operate on an open shop basis the remainder of the season. “Fruit packing houses have suffered no little annoyance... by discontented murmurings of fruit pickers and packers. Crescent City packers... issued an ultimatum to the effect that they would fix a price for handling fruit, and that it would be handled under open shop conditions.” Open shop meant that employees are not required to join if a union has been voted into the shop. Unions preferred a closed shop, one where workers had to be a member of a particular union to be employed there. Growers and packinghouses declined to interact with labor unions by making them open shop, permitting their hires to engage in any line of employment whether or not they were in a union.¹³¹ Open shop also made it easier for strikers to be fired and for replacement workers to be hired. By operating as open shop businesses, growers prohibited outside labor unions from becoming the representatives of citrus workers.

¹²⁹ Cindy Hahamovitch, *The Fruits of their Labor: Atlantic Coast Farmworkers and the Making of Migrant Poverty* (Chapel Hill: University of North Carolina Press, 1997), 82; Ortiz, *Emancipation Betrayed*, 311.

¹³⁰ “Crescent Growers To Pay Pickers Eight Cents,” *Palatka Daily News*, November 7, 1919, 4.

¹³¹ “Open Shop Packing,” *Palatka Daily News*, November 8, 1919, 2; “Adopting Open Shop,” *Palatka Daily News*, November 8, 1919, 4.

Besides advocating open shop, growers combated unions by forming committees against union activity. In Manatee County, employers formed the “Liberty Council,” a committee of bankers and businessmen in Bradenton who urged “speedy and permanent settlement of all questions between the employers and the employed,” and to put down union activity and labor insurgencies.¹³² Law enforcement agencies discouraged union activity and aided growers’ labor repression by arresting rabble-rousers. When farm workers at one Leesburg grove quit to protest their pay, Lake County Sheriff deputies arrested them.¹³³ Law enforcement aimed to control black workers by preventing any unemployment or loitering. African American laborers were arrested if they were not working, assessed exorbitant fees, and became trapped in debt peonage. Bondsmen worked hand in glove with citrus growers and foremen, locating workers for the groves in exchange for fines and bonds costs.¹³⁴

As the middle of the 20th century approached, issues did not improve for black citrus laborers in Florida, even with more help from nationally organized labor unions. Even by the late 1930s, Florida was still far from industrial and not far removed from frontier conditions. Central Florida was still mostly rural, agrarian, and southern in culture. Some labor unions operated out of Tampa, but there was little to no union representation in the Florida citrus belt. Jerrell Shofner noted that Central Florida’s agricultural economy made the region “...a bastion of defense for traditional American ideas,” including “property rights” and “freedom of contract.” Labor was a commodity to be purchased by employers from individual workers. African Americans were still believed to be the natural labor class, a commodity exploited by some employers. Concepts of

¹³² “No Desire To Form New Political Party,” *Tampa Tribune*, July 30, 1919, 11.

¹³³ Ortiz, *Emancipation Betrayed*, 164; Walter White, unpublished field report, *Papers of the National Association for the Advancement of Colored People*, Part 10, reel 23, frames 284–285.

¹³⁴ King, *Devil in the Grove*, 78-80.

minimum wage and full-time employment were not well known or practiced in the seasonal work of the citrus belt. Most white citizens remained fearful of labor unions due to assumed ties with communism and believed that unions promoted organized resistance among minorities. As the citrus industry grew exponentially in the 1930s, union activity remained low. Unions were still seen as threats to whites because unions offered African Americans the means to assemble.¹³⁵

When organizers of the indigenous United Citrus Workers (UCW) and the United Cannery, Agricultural, Packing, and Allied Worker of America (UCAPAWA) began operating and recruiting black citrus laborers in the mid-1930s, white citrus growers reacted swiftly with vigor and anger. With its affiliation with the Congress of Industrial Organizations (CIO), its “communist” leadership, and its interracial membership party, UCAPAWA organizers in particular were unwelcome in Florida’s citrus regions. The infamous Ku Klux Klan (KKK) was most aggressive in defending white superiority. The Florida KKK launched marches and night rides against alleged black radicalism, non-Protestant religions, and organized labor activity throughout the state’s citrus areas. In 1934, KKK members beat several UCW organizers in Orange County and made one disappear in Polk.¹³⁶ Beginning on November 17, 1938, the UCAPAWA called for strikes at six packinghouses in Lake Alfred and Winter Haven to protest the refusal of general managers to increase workers’ wages. On November 30, a riot broke out at the Lake Alfred Citrus Growers Association when some 300 people started throwing rocks at replacement workers entering the packinghouse. Despite the violence, managers continued to

¹³⁵ Jerrell Shofner, “Communists, Klansmen, and the CIO in the Florida Citrus Industry,” *Florida Historical Quarterly* 71, no. 3 (January 1993): 300-301.

¹³⁶ David M. Chalmers, *Hooded Americanism: The History of the Ku Klux Klan*, 3rd Ed. (Durham: Duke University Press, 1987), 311; Shofner, “Communists, Klansmen, and the CIO,” 301.

hire replacements and some called for growers to pick their own fruit instead of depend on hiring labor.¹³⁷ While UCAPAWA and CIO representatives tried to get the packinghouses' managers to submit to conciliation, an estimated 400 Klansmen paraded through Lake Alfred, Winter Haven, and Auburndale on December 6. Exemplifying the power the KKK held at the time, they made little effort to hide their identities. Some wore no hoods or masks and others unmasked while they were walking in front of the spectators lining the streets. The leader of this KKK parade, who did not reveal his identity to the press, spoke openly about the parade's purpose, saying, "We believe in the principles of Americanism and do not intend to tolerate strikers and radicals," claiming, "we know who the radicals are, and we shall take care of them in due course."¹³⁸

The KKK's intimidation tactic worked. The UCAPAWA and CIO removed the pickets by December 9. No agreement was reached to reemploy the striking workers. In fact, the union did not return to Florida the following season. To Shofner, the UCAPAWA's abortive effort to organize the Florida citrus industry in the 1930s actually made it harder for working people to try to improve their status for years afterward. This was because unions were more easily categorized as "communists" and "outside agitators" when they failed to achieve their goals despite organizing strikes, forming picket lines, and increasing the chance of violent conflict between workers and management. But even if unions remained active, the Florida legislature enacted "right-to-work laws" in 1944 that made it more difficult for labor unions to operate in the state.¹³⁹ Due to lack of union activity in the citrus industry, when laborers were in short supply during WWII, local law enforcement agencies throughout Central Florida continued to

¹³⁷ "Two Injured In Fight As Citrus Strike Spreads," *Tampa Tribune*, November 30, 1938, 26; "Fruit Strikers Are Held From Plant Violence," *Tampa Tribune*, December 1, 1938, 5.

¹³⁸ "Kluxers With Tampa Tags Parade In Polk," *Tampa Tribune*, December 6, 1938, 1.

¹³⁹ *Florida Constitution*, Article 1, Section 6. (Amended by General Election in 1944).

aid citrus packinghouses. They rounded up workers by enforcing vagrancy laws and other constitutionally questionable methods. Thanks to the vilification of labor unions, economic and political conservatives continued to dominate the law-making process in Florida beyond the mid-20th-century.¹⁴⁰

Despite the failure of state laws to protect their rights, black Floridians did not suffer such terror lightly; they practiced self-help in order to protect themselves and establish their own homes and farms. They not only defended themselves but continued to invoke the Fourteenth Amendment's language of equal protection under federal law, for they knew the state government abrogated its responsibility to protect what white citizens considered cheap and expendable black lives. In order to better protect themselves and to live more freely from whites, African-Americans in Florida's citrus regions created and federally incorporated their own separate and self-sustaining communities.

The best example of such a community is located about seven miles north of Orlando, the town of Eatonville. Formally established in 1887, it is the oldest black incorporated municipality in the United States. As African-American freedmen drifted into Central Florida following the Southern Homestead Act of 1866 and subsequent land frenzy in the 1870s, some settled around Lake Maitland and worked for northerners who had built winter homes along its shore. Now known as Maitland, this community of white northerners employed the freedmen and their families to clear land, plant citrus groves, and assist in building infrastructure. However, the black settlers desired to live without white oversight and established a town of their own. From 1875 to 1877, the first attempts by blacks to buy land were hindered by the unwillingness of

¹⁴⁰ Shofner, "Communists, Klansmen, and the CIO in the Florida Citrus Industry," 309.

white landowners to sell acreage to them, but in 1882, two white men, Josiah Eaton and Lewis Lawrence, finally offered to sell black men a large tract of land one mile west of Lake Maitland. In 1881, out of a 160-acre tract that Eaton had bought in 1875, some 22 acres were sold to Lawrence, who platted the north ten acres and donated the property to the trustees of the local African Methodist Episcopal Church. In 1885, the south 12 acres were deeded to a black man, Joseph E. Clarke, who managed to buy additional property from Eaton's tract. By the time of its incorporation, Eatonville's original city limit encompassed 112 acres, all of which was open to African-Americans to purchase lots and build homes.¹⁴¹

An 1889 headline on the front page of the town's first newspaper, *The Eatonville Speaker*, read "Colored people of the United States: solve the great race problem by securing a home in Eatonville, Florida, a Negro city governed by Negroes." Described as a place "where wildlife abounds" and where "the slightest frosts are almost unknown," the article advertised Eatonville's low land prices: "five and ten tracts can be bought for five and ten dollars an acre... lots to actual settler (colored): 44 x 100, can be bought for thirty-five dollars [in] cash; and fifty on time."¹⁴² Since its inception, Eatonville was seen as an operational, affordable, all-black utopia, a working alternative for blacks living in oppressive communities throughout the South.

By the early 20th Century, Eatonville had become what was originally envisioned: a community that gave African Americans the chance to live independently, away from the prying eyes of white society. Its self-governance by black citizens made the town an inspiration for

¹⁴¹ Eatonville Historic District, Eatonville, Fl., National Register of Historic Places #97001214 received January 23, 1998 and added February 3, 1998, Section 8, 1-3; Frank M. Otey, *Eatonville, Florida: A Brief History of One of America's First Freedmen's Towns* (Winter Park, Florida: Four-G Publishers, 1989), 1-5.

¹⁴² "Colored People of the United States: Solve the Great Race Problem by Securing a Home in Eatonville, Florida, a Negro City Governed by Negroes," *Eatonville Speaker*, January 22, 1889.

African Americans nationwide to create their own self-sustaining living spaces. In the early 1900s, its townspeople continued to build one-story wood frame houses on their 50'x100' lots. They also set aside land for non-residential uses such as the construction of churches, municipal buildings, and cemeteries. Landowners usually bought more than one lot in order to farm, giving them the ability to not only own but also grow food for themselves. Many planted small gardens, vegetable plots, and even orange groves on additional acreage, becoming the small farmers once championed by Florida boosters at the century's turn. Residents used nearby lakes for fishing, boating, and picnicking and to cook, bathe, and irrigate their crops. Eatonville also became home to the area's best school for black children in grades 6 through 12, the Robert Hungerford Industrial School founded in 1899.¹⁴³

In all, Eatonville provided African Americans a safe home base to live in as they worked in the groves and services that supported Orange County's citrus-based economy. Men found year-round employment with the numerous citrus groves surrounding Eatonville, working as pickers, pruners, and in packinghouses. Some worked on building new railroad lines throughout the region. Others started their own businesses and made a living in Eatonville itself, becoming storekeepers, builders, cobblers, and other entrepreneurs. Women were cooks and maids at homes in nearby towns, and they also worked in citrus groves and tended family vegetable gardens. It was a place where black children were encouraged to go to school. Many received vocational training through the Hungerford School and their religious training through local churches' Sunday schools.¹⁴⁴

¹⁴³ Eatonville Historic District, Eatonville, Fl., National Register of Historic Places #97001214, Section 8, 6-7.

¹⁴⁴ Otey, *Eatonville, Florida*, 8-9.

Eatonville was not the only community that acted as a haven for African-Americans living and working in Orange County. Another example was Clarcona, a name derived in the late 1930s and early 1940s to a place first known as “Clear Corner.” Clarcona was a small, unincorporated township three miles south of Apopka in the northwest portion of Orange County. It was served by the Atlantic Coastline Railroad, which connected it to other communities like Apopka, Ocoee, Winter Garden, Montverde, and Sanford. Like Eatonville, Clarcona’s main source of employment derived from citrus caretaking, grove service, and railroading. Citrus groves dominated the landscape around Clarcona, and included groves/packinghouses operated by Ollie Gilliam, the Winter Garden Citrus Growers Exchange, and four other families, Fawcett, Whitfield, Kellog, and Richardson. This tiny community’s school, the Clarcona Colored School, was supplied by materials from citrus groves. Though white and black families lived in Clarcona, white students enrolled in nearby Ocoee or Apopka. Even by the mid-20th century, the Clarcona School did not have the modern conveniences of running water, electricity, or indoor plumbing. Kerosene and white gas lamps provided light, a wood-burning, cast heater provided heat, and a stainless-steel tub held water that was used for drinking and washing. In fact, the local citrus businesses inadvertently supplied the school with building supplies and fuel for heating. Cabinets and stands in the schoolhouse were made from orange field boxes. Though boys were allotted time during school hours to gather firewood for the heater, several students’ parents who worked in the groves and packinghouses would bring firewood and scrap wood from the area citrus businesses.¹⁴⁵ Though Clarcona was much smaller and did not grow like Eatonville into the 21st century, both communities thrived as a result of the

¹⁴⁵ “Typed narrative about Clarcona, Florida, Undated,” Folder 34, Box 1, Series 1, The Carol Mundy Collection, 1794-2010 (CMC), Special Collections and University Archives, University of Central Florida, Orlando, Florida.

work in the citrus industry and were the proud homes of persevering and hard-working African-Americans.

It was in small land plots surrounding such rural communities that small black farmers started their own citrus groves and became persistent examples of small farm republicanism in the rapidly industrializing Florida citrus industry of the early 20th century. One example was Ella Wall of Apopka. Wall is remembered in Zora Neal Hurston's *Mules and Men*, a provocative black female from Mulberry who almost fought the headstrong Big Sweet in a juke joint over a man named Joe Willard.¹⁴⁶ But the documents related to the real Ella Wall do not portray the fictional Ella Wall. Rather, through her own quit-claim deeds and the purchase receipts, tax forms, and legal documents, Ella Wall is revealed as a businesswoman and entrepreneur who managed orange groves in Apopka.

Ella Wall was born in Washington County, Pennsylvania in 1874. She moved to Apopka as a widow in the early 1920s and bought land there. In 1924, Wall purchased the north half of Lot 27 Block J from A. M. and Julia A. Starbird.¹⁴⁷ On May 22, 1928, the other half of the Lot 27 Block J was transferred from J.D. Beggs, Leila S. Beggs, Annie E. Beggs, Laura B. Casey, and T.L. Casey to Ella Wall for \$38.28.¹⁴⁸ Within four years, Wall owned four parcels of land. She operated an orange grove on this land and also constructed wooden buildings that she rented out to migrant workers during the citrus harvest.¹⁴⁹ She was a close friend and confidant of Michael Gladden Jr., another African American who was the executor of a successful Apopka

¹⁴⁶ Ella Wall is the subject of Chapter 7 in Zora Neale Hurston, *Mules and men*, Reprint (Bloomington: University of Indiana Press, 1978 [originally published 1935]).

¹⁴⁷ Property Warranty Deed for Ella Wall, December 8, 1924, Folder 34, Box 1, Series 1, CMC.

¹⁴⁸ Quit-claim deed for Ella Wall, June 1, 1928, Folder 132, Box 1, Series 1, CMC.

¹⁴⁹ "Ella Wall," RICHES. <https://richesmi.cah.ucf.edu/omeka/exhibits/show/apopka/ins/ella> [accessed June 23, 2018].

businessman's estate, George W. Oden. Gladden himself was a storekeeper, laundromat proprietor, and citrus grower very involved in Apopka's black community.¹⁵⁰ Besides writing letters on Wall's behalf to her relatives out of state, Gladden helped Wall with legal documents concerning her groves.¹⁵¹ For example, Michael Gladden's signature appeared with Ella's on an "Applications for Reimbursement" form concerning her citrus groves. Growers filled out these applications to be reimbursed for government quarantines of their groves during the Mediterranean fruit fly infestation. Written on this application, "Ella Walls of Apopka, Orange County, Florida... was the owner of the property listed [Lot 21, Block J of Apopka] and that the same was destroyed under date of April 1, 1929 A.D. to Sept. 30, A.D. 1929 by reason of the quarantine imposed in the course of the so-called 'Mediterranean Fruit Fly Quarantine.'" The application listed the confiscation of twenty-five orange crates, damages to seventy-five orange trees from "chemical spray," plus damages to "Grapes," "Persimmons," and "3 Plumb [sic] trees" and "2 Mulberry trees" that were "cut down," resulting in a \$136.00 grand total for all damage to the property.¹⁵² In all, Gladden handled the legal and financial documents linked to Wall's citrus groves. Wall was able to own land, manage groves, house workers, and become a small private venture in Florida's growing citrus industry.

Another example of an African-American citrus grower was Prince Butler Boston of Oviedo. Born around 1871, Prince Butler Boston was of mixed race. He was the child of an ex-slave and Dr. Alexander Atkinson, a white physician in Brunswick, Georgia. When his father

¹⁵⁰ "Michael Gladden, Jr.," *Orlando Sentinel*, April 21, 1982, C-4.

¹⁵¹ Michael Gladden wrote several letters for Ella Wall to Wall's niece, Daisy White, about well being and possible visits. Ella Wall to Daisy White (written by Michael Gladden Jr.), March 10, 1928. Folder 33, Box 2, Series 1, CMC; Ella Wall to Daisy White (written by Michael Gladden Jr.), March 12, 1928, Folders 34-35, Box 2, Series 1, CMC.

¹⁵² Ella Wall, Application for Reimbursement of Confiscated Fruit, April 1, 1929, Folder 46, Box 2, Series 1, CMC.

moved his medical practice from Georgia to Oviedo, Florida, in 1885, Boston moved with him. The first licensed doctor to set up practice in Oviedo, Atkinson began growing citrus south of town near Lake Hayes, but after the 1895 freeze struck the region, he gave up on citrus farming and returned to Georgia. Prince Butler Boston inherited his father's freeze-damaged groves and rebuilt them. Boston had success with his father's grove, and he earned respect in the vicinity. He played a major role in reinvigorating south Seminole County's orange groves. Besides taking on the task of grafting new buds onto hardy rootstock in his own grove, Boston was hired to rebud trees for three other Oviedo grove owners who all wanted to try a new kind of budwood from Jamaica, an easy-peeling strain that became famed as the Temple orange. In 1900, budwood from this strain came from a Winter Park grove owned by the Hakes family, fifteen years before its namesake, W.C. Temple, discovered the variety and sent it to nurseries for commercial use. Boston helped propagate this renowned variety before it was copyrighted for sale by nurseries, becoming one of the first growers in the state to recognize the potential of the Temple orange variety for the Florida citrus history. Boston's work with the Temple orange is direct evidence of the overlooked influence that African-American individuals had in shaping the development of Florida citrus. Boston's influence did not stop in citrus groves. He became a respected leader in Oviedo's black community. Boston was a board member for the segregated school for black settler children in Oviedo and a trustee for Eatonville's Hungerford School. In 1926, he gave five acres of his homestead in Oviedo for a cemetery operated by Antioch Missionary Baptist Church, now named Boston Hill Cemetery in his honor. He was a deacon of Antioch Missionary Baptist Church for sixty-one years, using his own money to build an additional wing to his church. He also encouraged other Oviedo-area blacks to save their money

and buy farms and homes of their own to have more independent and self-sustaining livelihoods.¹⁵³ By the time Boston passed away in 1947, he was not only a respected grower and real-estate owner but also a stockholder in the Citizens Bank of Oviedo, and left an estate of \$100,000 to his wife Julia and his eight children.¹⁵⁴ In all, Boston epitomized the successful black grower in Florida, a man of color who was able to carve his own fortune and respect by farming citrus groves.

Eatonville too was home to many smalltime African American citrus growers who used their experience working in surrounding citrus farms to start their own groves or become managers of other people's groves. In *Eatonville, Florida*, Frank M. Otey compiled several names of men who became successful in their own citrus ventures between 1920 and 1940. One such man was Sam Weston, who found employment as an orange picker when he moved to Eatonville and "through sacrifice and determination, he was able to purchase his own land and plant orange groves that belonged to him." Eventually, Weston acquired 100 acres of land with lakes west of Eatonville Road and Forest City Road. Lake Weston Elementary School, named for Sam Weston, sat on the southwest portion of his former property. Otey recalled, "when the name was chosen, the general public was not aware that Weston was a black man." Another memorable Eatonville citizen was Larkin Franklin, a full-blood Mohawk Indian. He and his wife, an African American woman, and their three children moved to the area in the early 1920s as squatters, claiming ten acres of land along the south shores of Lake Sybelia. He initially found

¹⁵³Jim Robinson, "Boston's Dedication Bears Fruit in Community, Citrus Industry," *Orlando Sentinel*, February 2, 2003. RICHES of Central Florida. <https://richesmi.cah.ucf.edu/omeka/items/show/5260>. [accessed September 21, 2017]

Ida Boston and Porsha Dossie, "Oral History of Ida Boston." RICHES of Central Florida. <https://richesmi.cah.ucf.edu/omeka/items/show/5296> [accessed June 8, 2018]

¹⁵⁴"Citrus Grower Leaves Estate of \$100,000," *Pittsburgh Courier*, March 15, 1947, 12.

work as a fruit picker but later became a caretaker of several citrus groves and eventually earned enough money to establish his own fruit grove. There was also Attaway Ward, a black man who picked fruit and was able to ship it across country “because he built his own packing plant in his back yard.” But the most famous citizen of the era was James Steel. Coming from Mississippi in 1917 with his wife “and not much else,” by the 1940s, Steel owned a large orange grove, several rental houses, a 3-bedroom/2-bathroom family home with modern conveniences, and two automobiles. Otey noted, “No other Negro within miles was known to have acquired as much personal and real property.” An expert on citrus, Steel maintained the large estates of wealthy northerners in Maitland who came south in the winter. Most remarkably, Steel admitted that when he came to Eatonville, “all he knew was how to pick cotton,” but if hundreds of other people could learn to work with fruit in Florida and make a living through citrus farming, so could he.¹⁵⁵ Eatonville was not only a place where African Americans could live, work, and vote freely, it was a bastion of small farm republicanism for the Florida citrus industry.

These contributions of African American individuals to the Florida citrus industry are evidence that blacks had considerable influence shaping the Florida citrus industry, not so much by immense production numbers but by keeping alive the original vision for Florida’s undeveloped lands as a haven for small farmers to live and prosper. Targets of racial stereotype, segregation, and violence, African American citrus growers in the early 20th century are testaments to the fact that underprivileged minorities have the wherewithal to positively affect a whole enterprise, to be prime examples of the small farm republicanism and individualism that characterized growers in the Florida citrus industry as it was rebuilt into a substantial agricultural

¹⁵⁵ Otey, Eatonville, Florida, 21-24.

system. But as the 20th century progressed, the interests of large growers challenged small growers efforts heavily, leading not only to the industry being rebuilt but remade in its character, in the powers that dictated it, and in how it would be shaped in the future.

CHAPTER FIVE: COOPERATIVES

Michele Foucault wrote that, “Discourses are not once and for all subservient to power or raised up against it... We must make allowances for the complex and unstable process whereby a discourse can be both an instrument and an effect of power, but also a hindrance, a stumbling point of resistance and a starting point for an opposing strategy. Discourse transmits and produces power; it reinforces it, but also undermines and exposes it, renders it fragile and makes it possible to thwart.”¹⁵⁶ This observation by Foucault on power is just as applicable on narratives of American agricultural history. Documents from big citrus growers reveal discourses of power within the Florida citrus industry. The industrialization of citrus not only brought science, mechanization, and labor issues, it also brought struggles for power between big growers and small growers.

The following chapter analyzes the discourses related to the establishment of the Florida Citrus Exchange, the state’s largest grower-owned cooperative in the early 20th century. By examining the history of this exchange, one can see that there was a fight for power between growers who wanted to cooperate and growers who wanted to remain independent. To growers who were members of the Florida Citrus Exchange, the statewide citrus cooperative was the best way for the industry to consolidate and regulate itself to operate efficiently and profitably, but to independent big growers who found their own way to success, it was more hindering than beneficial to their operations. This chapter analyzes the relationship between the Florida Citrus Exchange and an influential independent citrus company to uncover why certain growers resisted

¹⁵⁶ Michel Foucault, *The History of Sexuality: The Will to Knowledge* (London: Penguin Books, 1998) 100-101.

membership in cooperative organization. It argues that Florida citrus growers had practical reasoning behind their resistance to cooperation. They did not join the Florida Citrus Exchange because they were too disorganized or individualistic to cooperate with fellow growers, as some historians have claimed. Rather, they saw the exchange as a threat to their future business and refused to join a cooperative they believed could harm rather than help the Florida citrus industry.

Founded in 1909, the Florida Citrus Exchange (FCE) was the product of years of financial struggle for citrus growers who desired the success seen in the west with the late-19th-century growth and consolidation of the California Fruit Growers' Exchange (CFGE), also known as Sunkist. It was an embodiment of an older idea: the agricultural cooperative, where farmers pooled their resources in various areas of activity. Whether to have credit to operate their farms or to fight politically for more control and say in the processing, marketing, and the sale of the products they raised, cooperatives represented the collective desires of their member farmers. Continuing well into the 1900s, farmers saw middlemen businesses as robbers of their money, governments as unfair or unsympathetic to agricultural development, and the national economy as far too intertwined with industrial interests to care for farmers. Commonly identified with the national People's Party in the 1890s, the greater Populist movement transcended this party, having roots going back to the activities of the Grange, the Farmer's Alliance, and other precursor farmer and labor organizations in late-1800s America. The product of farmers' concerns with economic exclusion, agrarian reform, and political activism, the idea of the

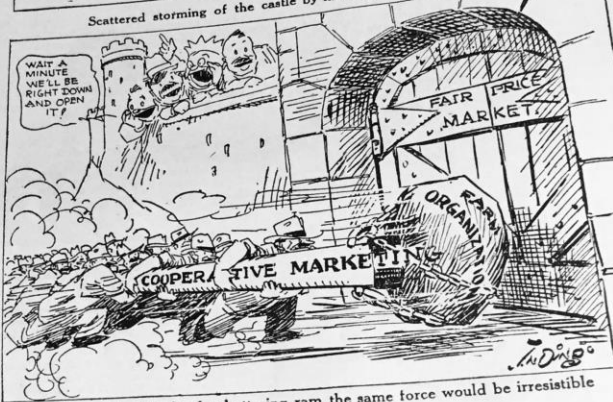
cooperative continued to reverberate in America, affecting the development of the Florida citrus industry in the early 20th century.¹⁵⁷

¹⁵⁷ Charles Postel, *The Populist Vision* (New York: Oxford University Press, 2007) 104-106, 113-115; Elizabeth Sanders, *Roots of Reform: Farmers, Workers, and the American State, 1877-1917* (Chicago: University of Chicago Press, 1999), 101-147.

THEY ARE HELPED BEST WHO HELP THEMSELVES
Copyright, 1925, New York Tribune Co.



Scattered storming of the castle by individuals will avail nothing



But united back of a battering ram the same force would be irresistible

This cartoon appeared in a recent issue of the New York Herald-Tribune. It was drawn by J. N. Ding, one of America's most famous cartoonists.

“United We Stand; Divided We Fall”

Ding's cartoon, reproduced above, is illustrative of the sentiment that is sweeping the country in favor of cooperative marketing of farm products by grower-controlled organizations.

The press is reflecting a growing appreciation among all classes for the need of stabilizing agriculture—and with it a conviction that the farmers alone, by working together, can do it.

The tide of this movement has reached Florida.

Citrus growers everywhere throughout the state are joining the cooperative ranks. They have already accomplished many things that would have been impossible under the old speculative system of individual competition. When fully and properly organized, they will win their struggle for fair and profitable prices.

FLORIDA CITRUS EXCHANGE

A non-profit, cooperative association of 7,000 Florida citrus fruit growers

Headquarters at Tampa

Figure 3: Florida Citrus Exchange advertisement in *The Florida Grower*, January 31, 1925, 2, Florida Historical Society, General Collection, Cocoa, Florida.

A two-panel cartoon by J.N. Ding of the *New York Herald-Tribune* shows the power promised by cooperative farming (Figure 3). In the first panel of this cartoon, a mob labeled “unorganized farmers” rushes the gateway to a large castle representing a “fair price market.” While these farmers push, shove, and climb over each other at the castle door, four businessmen representing “organized steel prices,” “organized labor prices,” “organized business,” and “organized commodity prices” grin happily from the safe height of the ramparts at the farmers’ futile struggle to breach the castle’s defenses. But in the second panel, the tide of the battle turned. Holding a gigantic log labeled “cooperative marketing” with a boulder of “farm organization” chained at its end, the farmers use the battering ram to smash the gate to the “fair price market.” With looks of concern, the four businessmen on the ramparts call down to the farmers “Wait a minute, we’ll be right down to open it!” Headlined by “They are helped best who help themselves,” the illustration’s message is succinctly summed up at the bottom: “Scattered storming of the castle by individuals will avail to nothing; But united back of a battering ram the same force would be irresistible.”¹⁵⁸

This cartoon depicted a widely felt sentiment shared among farmers throughout the US in the early 20th century, including Florida’s citrus growers. Reproduced for an ad in the *Florida Grower* agricultural magazine titled “United We Stand; Divided We Fall”, Ding’s cartoon was used by the Florida Citrus Exchange to convey “...the sentiment... sweeping the country in favor of cooperative marketing of farm products by grower-controlled organizations.” With newspapers “...reflecting a growing appreciation among all classes for the need of stabilizing agriculture” along with the “...conviction that the farmers alone, by working together, can do it,”

¹⁵⁸ Florida Citrus Exchange advertisement, “United We Stand; Divided We Fall,” *The Florida Grower*, January 31, 1925, 2, Florida Historical Society, General Collection, Cocoa, Florida.

this ad for the FCE proclaimed the tide of the cooperative movement had finally reached the sunshine state. “Citrus growers... throughout the state are joining the cooperative ranks... already [have] accomplished many things that would have been impossible under the old speculative system of individual competition.” By being fully and properly organized under the Florida Citrus Exchange, citrus growers could “...win their struggle for fair and profitable prices.”¹⁵⁹

Large-scale agricultural cooperatives were essential aspects to late-19th-century Populist ideology. Cooperatives as an organizational strategy has a long history dating to models in Europe, and their beginnings in America were traced to the Patrons of Husbandry, also known as the Grange. In meetings for the Southern Farmers’ Alliance in the late 1880s, farmers realized that cooperative agriculture was not utopian or theoretical, but a practical method based on existing realities, a way to manage the purchasing and marketing needs of small farmers. Farmers looked to burgeoning corporate institutions for models of empowerment. For Farmers’ Alliance leader Charles Macune, large-scale business cooperation possessed the justice, fairness, and equity needed to not only help farmers economically thrive but overcome the power boundaries of industrial monopolies. Cooperation granted more bargaining power to farmers over their products’ prices. Even though some early large-scale cooperative experiments struggled initially, farmers changing from local cooperatives to bigger cooperatives gained momentum in the late 19th century. Farmers expanded their local organizations into region-wide, statewide, and nationwide cooperative webs. The Farmers’ Alliance primarily appealed to staple crop agriculture: cotton, tobacco, and wheat. Nonetheless, its operation required bureaucratic

¹⁵⁹ Ibid.

organization, centralized directions, and coordinated communications from salaried executives, agents, and lobbyists, such cooperatives by and large were farmers' efforts to mimic the centralized purchasing power of corporations. Through bigger cooperatives, farmers attempted to control their products' markets to align with supply and demand. They wanted to standardize production, to centralize distribution and marketing, and to set their own prices on their crops.¹⁶⁰

Regardless of crop, cooperatives had three levels of organizational hierarchy: local, district, and central associations. Individual growers belonged to a local organization, local organizations belonged to a district organization, and district organizations belonged to a central organization. They have the same organization and many of the same goals, but the nature of the crops dictate different patterns. In Florida, citrus cooperatives' operations were financed by fees charged on every crate of fruit, which was roughly ten to twenty cents per crate in the 1910s. The main purpose of the cooperative was to create a business system that enabled fruit from multiple growers to be controlled by the grower-owned cooperative. It was a farmer-operated business that collectively harvested, sorted into various sizes and grades, and packed and shipped many farmers' produce across the United States. Cooperatives also had to respond to shifting demand to sell fruit as quick and profitably as possible. In all, cooperatives aimed to bring farmers within their ranks a bigger piece of the pie.¹⁶¹

But cooperatives also threatened merchants, landlords, banks, and middlemen businesses like packers and jobbers. Before citrus cooperatives, citrus packers and jobbers were businesses

¹⁶⁰ Postel, *The Populist Vision*, 104-105; Sanders, *Roots of Reform: Farmers, Workers, and the American State, 1877-1917*, 124-125.

¹⁶¹ Douglas Cazaux Sackman, *Orange Empire: California and the Fruits of Eden* (Berkeley: University of California Press, 2005), 93; Scott Hussey, "Freezes, Fights, and Fancy: The Formation of Agricultural Cooperatives in the Florida Citrus Industry," *Florida Historical Quarterly* 89, no. 1 (Summer 2010), 87-88.

that offered labor and marketing services to citrus growers. Growers used packers to sort, pack, and ship their citrus to markets and buyers. They contracted with packinghouses to help prepare and pack their fruit for sale. Jobbers were the wholesalers of growers' fruits. They either sold the growers' fruit to individual buyers, sold it at auction houses, or sold it directly to retailers, from grocery stores to fruit peddlers. Packers charged per box for their services, and jobbers earned a commission for selling fruit. Cooperatives helped improve production by sharing facilities, technology, and manpower in order to maximize returns on citrus growers' investment. If the majority of growers joined a cooperative, they could also standardize operations and shipping and unite citrus growers into one marketing agency. In all, cooperatives cut capital out of middlemen's hands, but cooperatives could also be money holes. They had to be careful not to depend too much on its members and to properly place earnings in saving or emergency accounts. Cash-short farmers were not the best sources to provide the necessary cushion of capital needed to keep cooperatives afloat in hard financial times. Even when farmers were united to work collectively, cooperatives were still adversely affected by the reduction of fruit that poor weather conditions or destructive pests invasions produced.

Despite these criticisms, cooperative farming was a growing desire for the turn-of-the-century- Florida citrus industry. California's domination in citrus production and sales in the late 19th century caused Florida growers to consider organizing their own statewide citrus cooperative. In February 1909, a committee of forty-six people representing Florida citrus traveled to California and observed its citrus industry. This committee convened later in

November at the Florida Orange Growers Convention and reported their impressions of the trip to an auditorium full of sun-tanned citrus growers assembled at the Tampa Bay Casino.¹⁶²

Some chairmen asked the meeting to be turned into a vote on whether Florida citrus should adopt “the California Plan,” a model that replicated the organization and operation of the first successful citrus cooperative in the United States, the California Fruit Growers’ Exchange.¹⁶³ Founded in Claremont as the Southern California Fruit Exchange in 1893 by P.J. Dreher and his son Edward L. Dreher, the cooperative for orange growers soon added lemon growers, and by 1905, it had expanded to 5,000 members and renamed itself the CFGE, which controlled 45 percent of the state’s citrus industry. The brand name for its fruit, Sunkist, was nationally known by the early 1900s thanks to this cooperative’s incredible marketing in newspaper advertisements, radio commercials, and through the colorful artwork on its labeling. Between 1885 and 1914, Americans increased their orange consumption by 80 percent thanks to Sunkist’s efforts in advertising oranges as healthy fruits that should be enjoyed daily. Advertising was not the sole cause for increased sales; improvements in transportation, lowered costs (and therefore lower prices) and higher consumer incomes that permitted the purchases of luxury fruits also helped. Also, Americans (especially urban Americans) were becoming more conscious of the relationship between food and good health. Still, advertising certainly brought attention to the fruit and increased sales. Besides its marketing achievements, attractive to Florida growers was the CFGE’s growth towards self-sufficiency. By 1907, the CFGE founded

¹⁶² James Hopkins, *Fifty Years of Citrus: The Florida Citrus Exchange, 1909-1959* (Gainesville: University of Florida Press, 1960), 1-2.

¹⁶³ *Ibid.*, 3-4.

its own lobbying arm, the Citrus Protective League, as well as its own supply company, the Fruit Growers Supply Company.¹⁶⁴

On June 1, 1909, the Florida Orange Growers' Committee voted to carry out this California plan and organize a cooperative. Several local citrus grower groups and district citrus associations joined as sub-exchanges and pledged their support to the FCE. But as soon as they decided to form a marketing organization, the growers opened a debate over financing their new creation. Growers present contributed and matched contributions to bankroll the opening of the FCE. Over two hundred thousand boxes of fruit were pledged at this meeting to be the first marketed by the cooperative. By the end of 1909, the FCE had almost twenty sub-exchanges and growers' associations throughout Central Florida under its umbrella, and its headquarters in Tampa employed 39 people.¹⁶⁵ Between its establishment and 1915, despite poor attendance records to board meetings, the FCE started to set aside expenditures for advertising and to create its own brand, Seald Sweet.¹⁶⁶ This brand name was displayed on every citrus crate marketed by the exchange along with labels for the growers. The exchange also began to fund its citrus research, even hiring university scientists from Kansas and Pittsburgh to experiment with citrus juice preservation.¹⁶⁷

Though it had thousands of dollars in accumulated accounts, the FCE sometimes struggled to finance itself. For instance, in the 1916-1917 season, a bad freeze limited the state's overall crop. US entry into WWI also caused citrus sales to plummet. In response, the FCE

¹⁶⁴ Sackman, *Orange Empire*, 93; H. Harold Hume, *The Cultivation of Citrus Fruits* (New York: MacMillan, 1937), 418-420.

¹⁶⁵ Hopkins, *Fifty Years of Citrus*, 6-9.

¹⁶⁶ *Ibid*, 21-22.

¹⁶⁷ *Ibid*, 17.

created a committee of board members to investigate the cooperative's financial structure. The committee reported that "retrenchment must be made and the strictest economy practiced," but even with their recommendations carried out, they found it necessary to borrow money to carry the business until sufficient returns met expenses.¹⁶⁸ By the 1920s, the FCE was more stable financially, and began to fund fruit inspection operations during harvest. The Seald-Sweet brand was respectable enough to cause growers outside the FCE to illegally brand their own fruit as Seald-Sweet.¹⁶⁹

The passage of the 1922 Capper-Volstead Act also helped FCE develop in the 1920s. Since 1890, the Sherman Anti-Trust Act, federal legislation directed against the monopolizing effects of industrial consolidation, did not exempt agricultural cooperatives and stunted collective organization by American farmers. The inclusion of cooperatives under the provisions against monopolies served as an effort to squeeze out smaller producers. The Capper-Volstead Act, also known as the Cooperative Marketing Act, corrected this oversight and reaffirmed agricultural cooperatives' needs to raise capital and engage in value-adding activities that prepared their products for markets without violating anti-trust law. The act consented to cooperatives entering into stock agreements without being considered trusts. Because fluctuations in agricultural markets due to weather, pests, and diseases heavily favored processors and distributors when terms of sale were negotiated with individual farmers, Capper-Volstead recognized the rights of cooperatives to unite farmers to bolster their economic strength and deal with processors and distributors on an equal basis. The U.S. Secretary of Agriculture was authorized to regulate cooperatives to ensure they acted fairly and stayed within the act's

¹⁶⁸ Ibid, 26-29.

¹⁶⁹ Ibid, 41-42.

legal framework. By legitimizing cooperatives, the Capper-Volstead Act paved the way for the continued development of the FCE.¹⁷⁰

Fifteen years after establishment, the FCE controlled thirty percent of citrus in Florida. As the cooperative began operations in the 1910s, there were many growers that saw themselves as better marketers and sellers than the FCE. Instead of joining the cooperative effort with fellow citrus growers, they resisted membership and competed against the FCE to make sure they got top dollar for their produce. Some growers warily watched the FCE gain power but doubted the cooperative's true effectiveness in managing and marketing many farmers' citrus.

One of these growers was Theodore Strawn from De Leon Springs discussed in Chapter Three. Strawn had joined other growers to organize the FCE, but just two years after its establishment, he left the exchange because he felt his fruit was superior in quality to the fruit produced by other members. He also decided that he could more effectively market his fruit on his own. Shortly after leaving the FCE, Strawn found buyers for his fruit throughout the United States, particularly in the North and Midwest. Because of its consistent superior quality, Strawn's fruit was in high demand and brought higher prices than most other California and Florida citrus producers. This success was what helped him modernize and expand his packing facilities by the 1920s.¹⁷¹

Sidney and Joshua Chase of Sanford, the owners and operators of Chase & Company, one of the largest private citrus businesses in Florida, were prime examples of growers that

¹⁷⁰ Hussey, "Freezes, Fights, and Fancy," 88-89; United States Department of Agriculture, "Antitrust Statue of Farmer Cooperatives: The Story of the Capper-Volstead Act," (Cooperative Information Report 59, Washington D.C.: Rural Business-Cooperative Service, 2002), 63-65, 91.

¹⁷¹ Strawn Citrus Packing House District, De Leon Springs, FL., NRHP (National Register of Historic Places) #93000931 received August 11, 1993 and added September 13, 1993, Sec. 8, 2.

resisted joining the FCE. The Chases were not only growers but started in citrus as insurers, jobbers, and packers. They were the middlemen that cooperatives aimed to replace. The Chases' contentious relationship with the Florida Citrus Exchange epitomized growers' resistance to statewide cooperation. The following narrative and discourse analysis exemplifies the power struggle over the marketing of fruit in the Florida citrus industry's formative years. As corporate regulatory bodies tried to govern how or where Florida citrus should be marketed, growers resisted joining what they saw as a good-intentioned but poorly executed idea. The Chases doubted the FCE's marketing strategies and the quality of fruit accepted under the Seald Sweet name. They worried that poor fruit would affect their label negatively. The cooperative name would give the Chases' brands (Sunniland, Isleworth, Golden Galleon, etc.) and their clients' brands a bad reputation.¹⁷² In sum, it was a risk for Chase & Co. to join the FCE. They feared they would lose too much control of their business. Larger growers' decision not to join the FCE signified a resistance movement against what was considered a consolidation of power by smaller producers within the Florida citrus industry. When placing this resistance in the greater history of cooperative farming in America, one sees this not only as a practical move on growers' parts to avoid losing business, but also as a power move that influenced the industry's development in the early 20th century.

Chase & Company was established in 1884 by Sydney O. Chase and Joshua C. Chase, two brothers from the Germantown neighborhood in Philadelphia, Pennsylvania. When the Florida citrus industry first boomed in the late 19th century, newspapers and magazines

¹⁷² One of these clients was L.B. Skinner from Chapter Three, whose Dunedin and Poinsettia brands were marketed by Chase & Co. To see more citrus labels under Chase & Co. and the FCE's Seald Sweet brand, see the Jerry Chicone Jr. Florida Citrus Label Collection, P.K. Yonge Library of Florida History, George A. Smathers Library, University of Florida, Gainesville, Florida. <http://ufdc.ufl.edu/citruslabel>.

nationwide carried stories of great fortunes to be made in citrus growing. After reading an article in *Scribner's Magazine*, Sydney Chase decided to move to Florida in 1878 and arrived in Sanford, where he worked for Henry M. Sanford, a forefather of Florida citrus and the owner of Belair Groves and Experimental Gardens. There, Sydney learned as much as he possibly could about citrus cultivation. In 1884, Sydney urged Joshua Coffin Chase to move to Sanford and together they started Chase & Co., where they sold fire insurance and fertilizer. As the company expanded, the brothers began to acquire citrus groves. They expected to grow, process and market their own produce, but experienced such success in this venture that other growers asked the brothers to market their own fruit. When the 1894-1895 freezes annihilated citrus groves throughout Florida, the Chases also suffered great losses in their own groves. Growers were not able to pay premiums on Chase & Co. loans for fertilizer, so demand for their business also plummeted after the freezes. Afterwards, the Chases turned to the cultivation of celery to provide income, becoming the first large-scale producers of celery in a region later lauded as the celery capital of the world. To learn new ways to manage Florida citrus, Joshua moved to California to become the manager of the Earl Fruit Company, and then later moved to St. Louis, Missouri, to manage the much larger United Fruit Company. Meanwhile, Sydney began to explore other businesses under the umbrella of Chase & Co., including railroads, phosphate mining, and banking. By 1904, the citrus industry in Florida had recovered and Joshua moved back to Florida. The brothers began to rebuild their citrus investments, buying groves and building a fertilizer plant. With the acquisition of more land to grow citrus came the buying of additional packinghouses and the construction of a farming supply store. Joshua undertook the restructuring of Chase & Co. to make their business more efficient and opened a branch office in Jacksonville.

From this new office, the Chases became highly involved in the sales and shipping of fruit and vegetables across the state. By the 1920s, Chase & Co. was flourishing. The Chases sold fire insurance, invested in storage facilities and again in fertilizer sales, and expanded their citrus and celery production. They became one of Sanford's largest employers. Besides handling the marketing of growers throughout Central Florida, they maintained a series of citrus groves and packinghouses in Seminole, Orange, Putnam, and Manatee counties.¹⁷³

Both Chase & Co. and the FCE aimed to return to their growers the highest possible margin of profit for their harvests, but because policy and control of the FCE were in the hands of its growers, many citrus growers saw the FCE as a united group of farmers dedicated to the better marketing and distribution of Florida citrus products.¹⁷⁴ However, Chase & Co. did not share this view. The Chase brothers were hesitant to hand over most of their power to a larger organization with what they saw as poor marketing strategies. A plan of action was essential for selling Florida fruit at top price in national markets, and the Chases were not impressed with the FCE's plans.¹⁷⁵ For this reason, Chase & Co. did not join the exchange at first, though they keenly observed the FCE's actions in the 1910s. This resistance is seen in the letters between the Chase brothers and their employees. At first, Chase & Co. seemed to observe its practices and share gossip on the rates and salaries of its employees. They received a number of letters from

¹⁷³ "Joshua Coffin Chase (1858-1948)," Florida Citrus Hall of Fame. <http://floridacitrushalloffame.com/inductees/joshua-coffin-chase/>; "Sydney Chase Sr.," Florida Citrus Hall of Fame. <http://floridacitrushalloffame.com/inductees/sydney-chase-sr/>; Description of "Letter from Sydney Chase To Joshua Chase, February 18, 1928", Omeka content on RICHES Mosaic Interface (abbreviated as RICHES). <https://richesmi.cah.ucf.edu/omeka/items/show/651>. RICHES is a digital umbrella program of interdisciplinary public history projects that bring together different UCF departments with profit and non-profit sectors of the surrounding communities in Central Florida. <https://riches.cah.ucf.edu/>.

¹⁷⁴ James Hopkins, *Fifty Years of Citrus*, v-vi.

¹⁷⁵ "Description" of Letter from Sydney Chase to Mayo Dade, April 20, 1925, Omeka content on RICHES. <https://richesmi.cah.ucf.edu/omeka/items/show/769>.

growers comparing the FCE's services to Chase & Co.'s services. For instance, G.M. Callen bought citrus from both businesses in 1915 and wrote, "Regarding prices, I will say that at times I found Chase & Co. cheaper than the Exchange and at times I found the Exchange cheaper than Chase & Co. Regarding pack, I will say that some of the Exchange pack is superior to Chase & Co.'s brand and I can truthfully say that some of Chase & Co.'s pack are superior to the Exchange." Callen thought that relations with both businesses had been "extremely profitable and pleasant."¹⁷⁶ Though this letter praised Chase & Co.'s services, it also hinted at the FCE's capability to become a profitable citrus business and rival to Chase & Co. Recognizing the potential for competition, the Chases kept their eyes on the FCE to identify weaknesses that would encourage growers and buyers to ally with their private business instead of the cooperative.

Chase & Co. also received reports from business associates who attended FCE meetings. While on a train leaving Ft. Myers and heading to Wauchula, C.M. Tyler wrote a letter to Chase & Co. about his recent attendance to an FCE meeting. Tyler had accepted an invitation to a meeting in Ft. Myers "knowing that [he] could get a straight line on the inside works of the Florida Citrus Exchange." At the meeting, Tyler heard a discussion on raising the salary of the FCE president, reducing the \$150,000 per year advertising budget by fifty percent, and determining "the correct cost to grower of putting fruit through the Exchange exclusive of picking, hauling, and packing." Additional costs discussed were fees for advertising and fees for local associations and district sub-exchanges that payed the rent, salaries of managers and clerks, and contingency funds used to repair and build packinghouses. With doubled-up packing costs

¹⁷⁶ George M. Callen to Chase & Co., April 4, 1915, Box 7, Folder 14.11, Chase Collection, P.K. Yonge Library of Florida History, George A. Smathers Library, University of Florida, Gainesville, Florida.

added to these fees, Tyler saw the FCE's prices as easy propaganda to get growers to join Chase & Co. ranks. He wrote, "It would seem this information properly used by our agents would help in getting contracts for our growers who are looking for results and not for sentiment."¹⁷⁷ In other words, Tyler thought that Chase & Co.'s actions, quality reputation, and competitive pricing would sway growers better than the cooperative ideal promoted by the FCE.

But as the FCE became more established, the Chases actively tried to undermine the exchange's efforts. By the mid-1920s, their correspondences began to focus on more active measures against the FCE. In 1924, Joshua Chase talked with Sydney Chase about a new member and possible hire as sales manager for the FCE. He advised his brother to stick out the wave of Exchange support from fellow citrus farmers. "The only thing I see that we can do is to let the revival period pass without attempting to interfere with the popular movement, just as we did the year the Exchange was organized..." He remembered that other growers "predicted that we would be bankrupt in one season if we did not join with the Exchange," and he was "... inclined to believe that there are a great many growers who have been in the Exchange that cannot again be fooled into signing up until they know more about how the reorganized Exchange will be officered."¹⁷⁸ Despite FCE popularity, the Chase brothers remained wary of the cooperative.

Instead of waiting out the wave of FCE popularity however, the Chases sought to be the alternative and the competitor and set out to snag unsatisfied farmers or whole associations from the exchange to add them to Chase & Co. ranks. Sydney Chase advocated for Chase & Co.

¹⁷⁷ C.M. Tyler to Chase & Co., May 26, 1919, RICHES. <https://richesmi.cah.ucf.edu/omeka/items/show/775> ; Hopkins, *Fifty Years of Citrus*, 45-46.

¹⁷⁸ Joshua C. Chase to Sydney O. Chase, April 19, 1924, RICHES. <https://richesmi.cah.ucf.edu/omeka/files/original/850f310e61cc90679d6f3308db726a89.pdf>.

employees to entice growers away from the FCE. Asking employees to compile statistics moved by the company in the previous season, Sydney suggested using the statistics to solicit growers for the following season, noting that the information could be used as a talking point to show that, " ... Chase & Company growers get a check for net proceeds within a reasonable length of time after shipment is made." Sydney also suggested employees to prepare, " ... an outline of a letter for withdrawal for Exchange growers to sign." Chase & Co. embraced their role as a replacement choice for growers to the FCE, especially to growers who wished to not renew contracts with the exchange. Sydney knew that choice alone was enticing to growers, noting "If they want to go into the Exchange after withdrawal they can do so and if they want to go into an independent marketing agency they can do so."¹⁷⁹ Sydney was happy to later receive a copy of the withdrawal letter he recommended, calling it a "short" and "simple" letter that any of his employees could memorize to better pitch Chase & Co. services to disgruntled growers.¹⁸⁰

Sydney Chase's recruiting efforts were evident in other correspondences. Sydney wrote N.D. Cloward of Winter Haven to make a "dead set" for disgruntled FCE growers in Polk County. Chase & Co. were "no strangers in that section of the country," and Sydney felt that their "general averages for [the] season warrant[ed]... making strenuous efforts to sign up business..." He admitted that growers of Valencia oranges came out well under the FCE, but the cooperative's return on grapefruit, some mid-season oranges, and late-season oranges did not compare well to Chase & Co.¹⁸¹

¹⁷⁹ Sydney O. Chase to Chase and Co., April 8, 1925, RICHES. <https://richesmi.cah.ucf.edu/omeka/items/show/773>.

¹⁸⁰ Sydney O. Chase to Chase and Co., April 13, 1925, RICHES. <https://richesmi.cah.ucf.edu/omeka/items/show/771>.

¹⁸¹ Sydney O. Chase to N.D. Cloward, April 17, 1925, Box 7. Folder 14.10A, Chase Collection.

In a message to citrus grower Mayo Dade, Sydney told Dade to follow up on an interview with “a Mr. Fairchilds at Babson Park... so that in [the] event [that] the Babson Park Sub-Exchange contemplates withdrawing from the Florida Citrus Exchange you can assist them in doing so prior to the withdrawal date which is covered by their contract with the head office.” Sydney also heard from a passerby that the sign on the Davenport Sub-Exchange packing house was being changed, and the circular ad that read “affiliated with the Florida Citrus Exchange” was being painted over. He noted that this may not indicate that “...they contemplate withdrawing from the main office,” but he thought he should pass along the information anyways. Sydney concluded by encouraging Dade,” if there are any Exchange members in DeSoto County that you know of, who are dissatisfied, or disappointed with results this season get busy with them and see if we can’t swing them our way.”¹⁸² In another letter exhibiting the desire to entice growers, Sydney Chase urged Dade to “keep plugging away after any old Exchange business, or any prospective business, no matter where...” According to Sydney, the FCE was recruiting new members “on the theory that if they could control a larger percentage of the business then they could stabilize prices...” He knew that Chase & Co. had to succeed in getting and keeping growers for the upcoming season. “The time has come now to work hard for next season’s business. We must have it.”¹⁸³ Chase and Co. wanted to capitalize on grower discontent with the FCE.

In their resistance to the FCE, Chase & Co. circulated newspaper articles to their employees to bolster their efforts to defame the exchange among its unhappy growers. This can

¹⁸² Sydney O. Chase to Mayo Dade, March 12, 1925, RICHES.
<https://richesmi.cah.ucf.edu/omeka/files/original/9cf02e4759a8859be96c783db1c5a81d.pdf>.

¹⁸³ Sydney O. Chase to Mayo Dade, April 20, 1925, RICHES.
<https://richesmi.cah.ucf.edu/omeka/files/original/c99e760c461890f5fcc6dd0a022bb82f.pdf>.

be seen in a letter from W.G. Lee to all of Chase & Co.'s Florida agents. "If there are any growers in your district who are dissatisfied with a competitive marketing organization... now is the time to get them pried loose." As a method of coercion, they mailed their agents a copy of the *Tri-City Times*, a Polk County newspaper criticizing the Exchange for rejecting a good-willed proposal by shippers: "You can carry this around as talking material and show it to any interested parties. It looks like pretty hot stuff!" However, Sydney Chase considered this letter's circulation as a step too far and "a mighty dangerous proposition." He worried that, "... instructing agents to make use of libelous information, which may or may not be based on facts..." could backfire on Chase & Co. Sydney Chase wrote W.G. Lee later about this incident, stating that, "Chase and Company never [has] used methods of this kind to get business, and we don't want to start it now..."¹⁸⁴

Professional even when dealing with competition, Chase & Co. did not always wage war against the FCE. In fact, by the end of the 1920s, an alliance arose between Chase & Co. and the FCE. Since 1924, members of the FCE prioritized working independent agencies like Chase & Co. into the fold of their cooperative. In a board meeting address at the FCE's Tampa headquarters, business manager C.E. Stewart Jr. noted that independents took interest in cooperative marketing but feared losing their identity, a concern shared by the Chases. Stewart saw "no reason why a commercial marketing organization really desiring to cooperate could not join the Florida Citrus Exchange and operate as a sub-exchange member." Stewart even mentioned Chase & Co. in the statement, asking why "[they] could not operate as a sub-

¹⁸⁴ W.G Lee to Chase & Co. Employees, March 16, 1928; Sydney O. Chase to Joshua C. Chase, March 17, 1928; Sydney O. Chase to W.G.Lee, March 17, 1928, RICHES. <https://richesmi.cah.ucf.edu/omeka/files/original/f3a03cc51ee22bdcf705fe5a06334132.pdf>.

exchange? They have packinghouses, they can buy fruit or they can pack fruit from the groves that they own or have leased.” If Chase & Co. could give growers better service, operate their packinghouses more economically, and get fruit shipped with great dispatch, Stewart saw that “such competition would have the most stimulating effect upon the operation of our associations and sub-exchanges.” If Chase & Co. joined the FCE, they could hold their own brands. They just had to put the Seald Sweet trademark and pay advertising assessment fees if they were to market their fruit through the FCE.¹⁸⁵

Besides strong willingness from the FCE to integrate Chase & Co. in the cooperative without the latter losing its admired identity, other events motivated the Chases to consider joining the FCE. One event was the hiring of C.C. Commander as general manager of the FCE in 1925. Previously the manager for the Polk County Sub-Exchange, C.C. Commander, who served as the FCE general manager for 26 years, was known for his honed administrative skills, his knowledge on citrus marketing and merchandising, and his support for federal marketing agreements to help develop Florida citrus exports. His strong marketing background plus his beliefs concerning the need for more regulatory entities in Florida citrus lined up well with the Chases’ convictions on the need for industry controls that were outside the FCE.

C.C. Commander supported the work of the Growers & Shippers League of Florida and the Florida Citrus Clearinghouse, regulatory programs unaffiliated with the FCE established to help the Florida citrus industry better control itself. Incorporated in 1924, the Growers and Shippers League operated as a non-profit organization made up of growers, packers, and shippers that focused on the interests of growers and shippers of citrus, vegetables and other

¹⁸⁵ Hopkins, *Fifty Years of Citrus*, 71-72.

Florida crops. Its headquarters were in Orlando and it was administered by an executive committee whose members were elected at annual meetings. This league was particularly focused on disease and pest management, interstate commerce, produce inspections, railroads and transportation, freight rates, and laws and regulations affecting their operations, and it shared many of its members and activities with the Florida State Horticultural Society.¹⁸⁶ Beginning in 1928, the Florida Citrus Growers' Clearing House Organization was incorporated under the cooperative statute of Florida and conformed to the Capper-Volstead Act. This clearinghouse was made up of federal and state agricultural workers, commercial people inside and outside of Florida, and citrus growers. It attempted to institute standardization, advertising, and shipment regulation by controlling the marketing firms that handled Florida's citrus crops.¹⁸⁷

C.C. Commander touted these organizations' efforts to get the Chases to reconsider the FCE's workability with outside entities. On a 1927 train ride from Asheville, North Carolina, Commander talked to Sydney Chase about the FCE's support for these organizations. Sydney remembered that Commander "did most of the talking" but discussed the state of citrus markets, the Grower and Shipper League, and the formation of the Florida Citrus Clearinghouse, stating that "the Exchange... was very much in favor [of the clearinghouse]" and gave "their full support" to the league.¹⁸⁸ This meeting was an effort by the Commander to show the Chases that it was possible for outside citrus organizations to work alongside the FCE.

¹⁸⁶ Dept. Staff, "A Guide to the Growers and Shippers League of Florida Records," Special Area and Studies Collections, George A. Smathers Libraries, University of Florida, Gainesville, Florida.

<http://web.uflib.ufl.edu/spec/pkyonge/GrowersShippersLeague.htm>.

¹⁸⁷ H. G. Hamilton, "Florida Citrus Report," *Journal of Farm Economics* 31, No. 4 (November 1949), 1237-1243.

¹⁸⁸ Sydney Chase to Joshua Chase, August 26, 1927. RICHES. <https://richesmi.cah.ucf.edu/omeka/items/show/1598>.

But other events caused the Chases to join the FCE. To stop the downward spiral of crop prices in 1929, President Herbert Hoover sponsored the Agricultural Marketing Act. This legislation sought to buy, sell, and store agricultural surpluses. For perishable fruits that could not be turned into surplus, this act allowed the federal government to generously lend money to farm organizations. Because of this, the Federal Farm Board approved loans to the FCE totaling \$3,300,000. These loans made possible the financing of mergers of large independent grower-shipper interests with the FCE. The Federal Farm Board also decreed that the Florida citrus industry could not qualify for federal loans unless some system of consolidation took the greater percentage of the Florida citrus crop under a single marketing control. Because the FCE already controlled almost forty percent of Florida's total fresh fruit sales in the 1929-1930 season, the FCE was the single marketing control that growers had to join to receive needed federal funding to survive the onset of the Great Depression. To meet the exigencies of the time, Chase & Co. consummated a merger with the FCE.¹⁸⁹

After years of resistance, Chase & Co. joined the Florida Citrus Exchange under a complex agreement. This alliance represented one of the immediate effects of consolidation for the FCE, which was the redesign of the cooperatives' charter to accommodate independent grower-shipper organizations. Perhaps a reward for fighting so diligently for their company's individuality and reputation, this accommodation led to a contract that still gave Chase & Co. control over how their fruit was packed, marketed, shipped, and who it was sold to. In October 1929, Chase & Co. agreed to a five-year marketing contract with the FCE. For nearly a half-million dollars, the company sold the leaseholds, lands, buildings, equipment, inventory of

¹⁸⁹ Hopkins, *Fifty Years of Citrus*, 110-111.

supplies, notes, mortgages, and accounts receivable to the FCE.¹⁹⁰ Chase & Co. agreed to move the office of its sale manager to the FCE's headquarters in Tampa, but besides taking over the leases, employee contracts, and taxes of Chase & Co. citrus services, the FCE carried out the original terms and conditions of Chase & Co. grower contracts at no greater costs to the growers. The FCE had to "render to the growers the same quality of service heretofore rendered by Chase," and that it would "save Chase...from any loss... from any growers' claims if any arising out of the negligent, faulty, or improper performance by Exchange of the duties of Chase under the assigned contract." During the life of any assigned grower contract, no sub-exchange or association charged any grower shipping through Chase & Co., which was made a sub-exchange to the FCE.¹⁹¹ In order to avoid any loss in reputation the Chases once feared would accompany an alliance with the FCE, they added clauses into their contract that guaranteed little to no fault would be blamed on Chase & Co. if there were any shortcomings in obligations.

Besides bestowing immunity from blame to possible mistakes, the FCE allowed the Chases to retain control over their newly organized sub-exchange operations. Though they could only market or sell fresh fruit through the FCE, the Chases had the right "by [their] own agencies only, to can or preserve fruit, or to reduce the same to other by-products of citrus... together with the right to market as it sees fit such canned or preserved fruit and such by-products of citrus fruit."¹⁹² They also were allowed to sell any or all of their citrus groves, for they only agreed to sell fruit grown on their groves to the FCE.¹⁹³ In fact, "all fruit originating through Chase's

¹⁹⁰ Sales and Packing Contract between Chase and Co. and Florida Citrus Exchange, Box 15, Folder 15.89, 1-2, Chase Collection.

¹⁹¹ Ibid, 8.

¹⁹² Ibid, 12.

¹⁹³ Ibid, 13.

Growers Contracts, at the option of the Exchange, [had to] be marketed through the sub-exchange to be established by Chase.” Under “no obligation to operate or maintain any or all of the packing houses deeded to the Exchange,” Chase & Co. instead concentrated their operations into “a separate Sub-Exchange at large.” They were still able to pick the sort of crate used to pack their fruit, to choose how the FCE’s brand or trademark was displayed on their brands’ labels, and to designate from time to time the parties, markets, and conditions of the fruit handled and sold through their sub-exchange.¹⁹⁴ They also chose who they employed and who led the operations of their sub-exchange. “The members of such Sub-Exchange shall be selected by Chase and under the control of Chase, and the choice of employees of the Sub-Exchange shall be in the absolute control of Chase and the Directors of the Sub-Exchange. All fruit of Chase packed by Chase shall be marketed by Exchange for Chase through such separate Sub-Exchange.”¹⁹⁵ Despite being integrated into an organization they resisted for years, the Chases still retained most of their power over their business.

At first, the Chases embraced their integration into the FCE. Joshua C. Chase served as president of the FCE in 1930 and 1931 and served on its board of directors until 1934. However, the Chases’ involvement with the FCE did not last the length of their contract. In mid-1933, Chase & Co. withdrew from the FCE almost two years before their contract expired. In a letter to their attorney, John C. Cooper Jr. of the Knight, Adair, Cooper, and Osbourne law firm in Jacksonville, Chase & Co. complained that there were “a number of instances where the Exchange has violated their contract with us... in which the Exchange agreed to render service to Chase & Co. to its shippers.” The FCE failed to provide shipment services and rates that were

¹⁹⁴ Ibid, 10-11.

¹⁹⁵ Ibid, 14.

equal to the services and rates provided by Chase & Co. To the Chases, the FCE showed “indifference, inefficiency, and neglect of carload shipments which resulted in growers receiving much less than they would have if the shipments had been efficiently handled.” First, the FCE issued stock in the company instead of remittance pay for a two-cent insurance charge for each crate of citrus. Second, the FCE did not allow Chase & Co. to handle accounts outside of the cooperative through a subsidiary sales office in New York City, the Flacal Sales Agency. Under the standing agreement, Chase & Co. could not control fruit directed by the Flacal Sales Agency because the Chases owned most of the agency’s shares. Displeased with this stipulation, Chase & Co. proposed to sell at least 51 percent of the agency’s shares to outsiders or at least people not connected to the Chases or their business interests, though Chase & Co. promised to repurchase these shares at the price they were bought at once their contract expired with the FCE. Third, Chase & Co. still desired to handle the business of growers not affiliated with the FCE. The Lake Wales Citrus Growers’ Association, who were once members of the exchange, wanted Chase & Co. only to handle its fruit sales for the coming season. Under the FCE contract, Chase & Co. could not do this, but the Chases argued that Sydney Chase Jr., who was a director of the FCE and manager of the Chase Sub-Exchange, could be employed by the association as its sales manager. Because Chase & Co. used every reasonable method to entice the Lake Wales growers to stay in the FCE, they saw it as reasonable to allow one of their men sell his services to the association, a move that was not prohibited under the contract between the Chases and the FCE. Finally, recent withdrawals by the FCE from the Florida Citrus Growers’ Clearing House, which subsequently folded in 1933, and the Grower & Shippers League of Florida were causes of concern for Chase & Co. In their letter to attorney Cooper, they believed the FCE “did their best

to put [the clearinghouse] out of business,” and they saw their withdrawal from the Grower and Shippers League as a questionable move considering the league was “an organization which has rendered invaluable assistance to the shippers and has been in existence for many years.” In all, Chase & Co. concluded that the FCE “may be grower owned, but it is not grower controlled.”¹⁹⁶

So ended an alliance influential to the development of the Florida citrus industry. Rather than joining and possibly streamlining the regulations and the operations of the industry with a collective of fellow citrus growers big and small, large independent growers like the Chases resisted the statewide cooperative effort to preserve their dominance in the industry. The FCE still made gains in membership and acreage in the 1933-1934 season, increasing its total volume to an estimated four percent despite the withdrawal of the large Chase & Co. organization.¹⁹⁷ Nonetheless, the withdrawal of such large citrus growers from the cooperative set a new direction for the Florida citrus industry. Instead of unifying their citrus operations with the small growers that defined the industry as it was being rebuilt after the 1894-1895 freezes, large-scale, highly capitalized growers figured that they were the only ones capable of expanding and modernizing the industry by their own devices. This shows that Florida was unlike California in its cooperative efforts not because they were disorganized. In fact, Florida growers were just as sophisticated and capable of organization as their western counterparts. Rather than following the example set by the CFGE, the early-20th-century Florida citrus industry follow the footsteps of its big growers in how to organize and operate successful large-scale, industrial citrus operations. It let the money and power of big growers, not the cooperative efforts of the small growers, dictate the future of the industry.

¹⁹⁶ Chase & Co. to John C. Cooper Jr., June 28, 1933, Box 7, Folder 14.12, Chase Collection.

¹⁹⁷ Hopkins, *Fifty Years of Citrus*, 144.

This discourse on cooperatives in the Florida citrus industry reveals exactly what Foucault observed with power. The promising ideal portrayed by the FCE produced power for smaller citrus growers in the industry, giving them the agency to expose the problems with middlemen and influence how the industry should adapt for the future. However, big growers like the Chases, who already wielded substantial experience and reputation as packers and jobbers, retained their power in the industry by undermining the FCE, rendering it fragile. They showed that membership in the FCE was unnecessary for survival or success in citrus, that the FCE was possible to thwart. This clash in power over the industry had huge ramifications, for the FCE did not become Florida's version of Sunkist. Big growers were now able to make the final say in who controls the industry.

CHAPTER SIX: GOVERNMENT

Fluctuating power between players in the early-20th-century Florida citrus industry was not just seen in Chase and Company's rocky relationship with the Florida Citrus Exchange. Another example is seen in the governing of the industry under the early administration of the Honorable Nathan Mayo, Florida's longest serving Commissioner of Agriculture. But Nathan Mayo's story presents the opposite perspective, in that it shows the *state's* reaction to resistance. Florida citrus growers disagreed with how the Florida Department of Agriculture under Commissioner Mayo regulated the industry in the 1920s and 1930s. However, despite being a powerful state politician not afraid to butt heads with opponents to his policies, Mayo stayed mum in how the citrus industry developed by the mid-20th century. Unlike the Chases, who tried to work with their opposition in the Florida Citrus Exchange before breaking ties, Mayo was unable to ignore the criticism from his constituency.

In the long run, Nathan Mayo had to be more flexible towards opposition to his department's authority on citrus matters. In fact, Commissioner Mayo was largely and legally replaced in directing Florida citrus affairs by another governing body, a committee of fruit growers known as the Florida Citrus Commission. Despite initially having considerable sovereignty in overseeing Florida's citrus operations, the Commissioner's attempts to exercise his power over this growing agricultural enterprise fell to eventual fatigue and failure. Regulating the laws and standards behind citrus shipments and sales, Mayo's authority buckled under the backlash from disgruntled citrus growers hundreds of miles away from his office in Tallahassee.

The following chapter argues that Mayo's handling of the citrus industry represented a watershed moment in its modernization. While the creation of the Florida Citrus Commission expanded government agency in the industry, it also effectively made big citrus growers the shapers of its future development, for large growers grabbed the power the commission represented. This commission effectively made highly-capitalized growers the most important constituent of Florida citrus. If the Chases represented the rise of corporate-minded growers within the industry in this era, Mayo's struggles represented the beginning of their political hold. The following narrative depicts clash between the wills of a powerful politician and a powerful agricultural system.

It is important to understand that Nathan Mayo was no pushover. In the early 20th century, when Florida's governor shared administrative powers with a collectively more powerful elected cabinet, cabinet members occasionally vied with governors and thwarted their will. Nathan Mayo was the epitome of such a powerful cabinet member. He served as Florida's Commissioner of Agriculture from 1923 to 1960, the longest term in Florida history and longer than any other commissioner of agriculture in the United States. Considering his office's responsibilities when he was selected, which included departmental control over Florida's agricultural advertising, inspection, marketing, land office, and even the state's highway patrol system and prison system, Mayo was one of the most powerful cabinet members in Florida history and at a time ran the most powerful political machine in the state.¹⁹⁸

¹⁹⁸ Martin M. La Godna, "The Florida State Department of Agriculture during the Administration of Nathan Mayo, 1923-1960," (PhD dissertation, University of Florida, 1970), iv; "Nathan Mayo Dies Of Rare Cancer," *Fort Myers News-Press*, 1-2; "Biographical: Typescripts, Biographical Notes, Excerpts From Interviews" folder, Box 1, Nathan Mayo Papers (abbreviated NMP), Special and Area Studies Collection, George A. Smathers Libraries, University of Florida, Gainesville, Florida.

Still, Nathan Mayo brought principle to his policies, and his policies reflected his background. Before taking office, he was a storekeeper from rural Summerfield, a small but busy trading community in Marion County, Florida. His country store there was the largest supplier of its kind between Ocala and Dade City. Within this business, Mayo sampled in numerous agricultural enterprises—store upkeep, farming, citrus, turpentine, naval stores, cotton, banking, and even politics. He first transcended his locale as the director of the Florida Development Board (precursor to the present Florida Chamber of Commerce). In 1923, Nathan Mayo was selected to be the 5th Florida Commissioner of Agriculture to fill the unexpired term of William Allen McRae.¹⁹⁹ A former superintendent and clerk of the court from Jackson County, W. A. McRae became commissioner in 1912 and served for nearly twelve years before resigning in 1923. Substantial growth occurred in the Florida Department of Agriculture during McRae's tenure, when he oversaw the addition of divisions to the department as well as a great increase in demand for information on Florida from opportunity-minded farmers and businessmen. Because he expected "to be connected to important development in the state," McRae found it necessary to sever his relations with the state government two months before his term's ending and resigned on November 1, 1923. Nathan Mayo, who had already served as a representative of Marion County in the lower house of the state legislature for two terms in 1921 and 1923, was appointed by Governor Cary Hardee as Commissioner of Agriculture.²⁰⁰

In the 1920s, Florida's constitution still did not clearly define the duties of the state Commissioner of Agriculture office aside from general obligations. Its functions often evolved

¹⁹⁹ La Godna, "The Florida State Department of Agriculture," 1, 9-10.

²⁰⁰ "Nathan Mayo To Succeed M'Rae as Commissioner," *The Tampa Tribune*, September 6, 1923, 1; "M'Rae Resigns State Farm Job After 12 Years," *The Miami News*, September 5, 1923, 1-2.

according to the character and enterprise of the person holding office, which meant that Nathan Mayo was free to interpret the position's responsibilities but was also largely free from state appropriation as the collector of the state's numerous agriculture-based fees. Because of this, the Florida Department of Agriculture grew disproportionately in power during Mayo's long tenure, for Mayo was energetic and felt a strong obligation to exercise his office's powers fully.²⁰¹ When he became commissioner, this department was still an inconsequential office, but Mayo was the game-changer, attempting to run the department as he would have his own business, even encouraging farmers to be more business-like in their own operations. For example, through the Bureau of Immigration, an office originally created to attract settlers to Florida placed under the Commissioner of Agriculture's control in 1885, Mayo helped publish an abundance of promotional literature on Florida including pamphlets, books, and advertisements in magazines and newspapers by the mid-1920s.²⁰²

Mayo also had populist leanings that influenced the Florida Department of Agriculture's policies. His populist sympathy stems partly from his two department aides who preceded his appointment to Commissioner of Agriculture. These men were Lucius Monroe Rhodes, the department's Commissioner of Marketing, and Thomas Joseph Brooks, the head of its Division of Agriculture and Immigration. Both were native Tennesseans who had backgrounds in populist activity through the Farmer's Union, a national 20th-century agricultural organization. But even at a personal level for Mayo, the interests of the small farmers and consumers preempted the interests of large growers, processors, and retailers. He practiced politics personalized for the

²⁰¹ La Godna, "The Florida State Department of Agriculture," 10, iv.

²⁰² For more on Mayo's promotion as Florida Commissioner of Agriculture, see Martin M. LaGodna, "Agriculture and Advertising: Florida State Bureau of Immigration, 1923-1960," *The Florida Historical Quarterly* 46, No. 3 (January 1968), 195-208.

farmers he lived and worked with in rural Central Florida, and his concern for the plain farmers' interest was genuine. Though he was an ineffective public speaker, voters tended to like him because he had the "common touch" with the electorate and he kept his field personnel constantly attuned to the electorate's sentiments. Mayo was not a wealthy farmer and his cabinet office was not lucrative. He was a middling business-farmer of conservative temperament with enough tinge of populism to make him a progressive and enough touch of the entrepreneur to make him willing to innovate.²⁰³ Talented in promotion efforts, Mayo quickly adopted the advertisement of Florida as one of his major activities, but Mayo made his reputation in programs that helped mostly small farmers. These include the aiding and promotion of agricultural shows and fairs along with the development of poultry and dairy farming. His most significant accomplishment as commissioner was the institution of a system of state farmers' markets that aided farmers who suffered from transportation difficulties that were common in Florida into the 1930s. With the establishment of these markets, he achieved a national reputation by comprising the first state farmers' market system in the country.²⁰⁴

However, he was not highly active or motivated to act in all agricultural areas, so his power within office showed limits. This is evident in the Florida citrus industry, where he became more of a follower than a leader, a strange fate considering how much authority the Commissioner of Agriculture had in Florida citrus fruit inspection. At the heart of its operations and finances, inspection was the foremost function of the Florida Department of Agriculture. It was the state's main consumer protection service and was key for maintaining honesty among

²⁰³ La Godna, "The Florida State Department of Agriculture," 1-2.

²⁰⁴ La Godna, "The Florida State Department of Agriculture," 2, 10-11. For more on Mayo's development of the statewide farmers' market, see Martin M. LaGodna, "Greens, Grist and Guernseys: Development of the Florida State Agricultural Marketing System," *The Florida Historical Quarterly* 53, No. 2 (October 1974), 146-163.

producers and distributors, becoming the police force regulating nearly all sizable agricultural industries. Though gasoline, vegetables, fertilizer, and measuring devices were among the many products examined, citrus inspection was the most crucial for the state's economy. Florida citrus was expanding and the number of large producers in the industry was increasing.²⁰⁵ Under Mayo's tenure in the 1920s, Florida's Department of Agriculture also grew with the agricultural systems throughout the state, gaining size and power as it regulated both large and small farmers. But though his department adapted to accommodate the exponential growth, the responsibility of inspection involved Mayo in squabbles and political battles with citrus growers that would hinder his power within Florida's most iconic agricultural industry.

This is exemplified in the crises caused by green fruit shipments in the 1920s and 1930s. To get the high prices of the early season, some Florida citrus growers picked the green fruit as soon as it reached mature size and heated it under cover to produce an unnatural color with the appearance of ripe fruit. Oranges were shipped to northern markets before they were fit for eating. Sour and unwholesome, the green fruit that reached market early diminished consumer demand for Florida citrus and gave the state's fruit a bad reputation. Maturity laws to counter such shipments had been enacted in the 1910's, but after years of green fruit problems, Mayo advocated for the passage of a new citrus maturity law in 1925.

As soon as citrus fruits were grown and marketed in Florida on a commercial scale, the problem of restricting the handling of green, immature fruit tested growers, shippers, and consumers. During the early part of the citrus season in September, October, and November, when fruit was scarce in markets and high prices generally prevailed, growers and shippers were

²⁰⁵ La Godna, "The Florida State Department of Agriculture," 2, 28, 37.

tempted to take advantage of the situation by coloring their immature fruit to make it look ripe for consumption. But such early shipments of green fruit demoralized the citrus market for Florida as a whole. Normal demand for fruit at satisfactory market prices came later in the shipping season. Green fruit hurt the profits and tarnished the reputation of Florida citrus exports. Unlike fruits such as apples and pears, citrus fruits do not ripen further once they are picked from the tree. When picked too green, the fruit acquired a very disagreeable flavor that caused food and health authorities to consider it unfit for use and caused large amounts of Florida citrus fruits to be quarantined and destroyed.

While the coloring of fruit was banned by the United States Department of Agriculture under the Food and Drugs Act of 1906 and the Food Inspection Decision 133 on March 28, 1911, no study had been made or standard fixed to legally determine what could be considered mature citrus fruit. Some “green shippers” continued to circumvent this decision by coloring citrus fruits in unventilated railroad cars. By holding the fruit in the warm and moist atmosphere of unventilated cars for five to ten days, green citrus continued to arrive “artificially colored” to markets, but with no change in sugar or acid content, the mature-looking fruit remained green in taste and thus unpalatable.²⁰⁶ Because the shipping of immature fruit remained a problem, the State of Florida passed its own green fruit law during the 1911 legislative session, the Immature Citrus Fruit Law, effectively banning the shipment of green fruit from Florida. Anyone caught selling, shipping, or delivering fruit deemed immature or unfit for consumption by the Florida

²⁰⁶ *Florida Quarterly Bulletin of the Department of Agriculture*, Vol. 32 (Tallahassee: Florida Department of Agriculture, 1921), 20-22; Hume, *Cultivation of Citrus Fruits*, 378; “Adulterated Oranges,” *The Tampa Tribune*, April 19, 1911, 6.

Department of Agriculture faced a fine not exceeding one thousand dollars, six months of imprisonment, or both punishments.²⁰⁷

But this 1911 law did not determine a standard or method to gauge citrus fruit maturity or immaturity. To address this problem, Commissioner William McRae appointed a committee to set a new citrus standard. By August 15, 1912, this committee reported a new standard at a citrus grower convention that took place in Gainesville. “If the chemical analysis shows the percentage weight of total sugar, as invert sugar, to be seven times or more than the total acid, as citric acid, the fruit shall be deemed mature.” The simplicity and inexpensiveness of performing the field test necessary to determine maturity caused many growers at the convention to support the passage of the new standard. Dubbed “one of the greatest moves ever made for the advancement of the citrus fruit industry in Florida,” the green fruit standard was adopted with slight modification by officials and health officers nationwide.²⁰⁸

Years of long legal battles over the law’s clarity followed its initial enactment. Besides setting the chemical standard for fruit maturity, the Florida legislature also stipulated that fruit showing one half color on the trees should be deemed mature. When fruit inspectors passed half-colored fruit, this was equivalent to removing lawful restrictions. Half-colored fruit mature was deemed mature without being tested by inspectors. On May 20, 1925, the Florida legislature enacted another Florida Citrus Fruit Law that made it unlawful for any person to sale, transport, prepare, receive, or deliver any citrus fruits between August 31st and November 26th, unless the fruit had a certificate of maturity and inspection from the Florida Department of Agriculture. It

²⁰⁷ *Florida Quarterly Bulletin of the Department of Agriculture*, Vol. 32, 22-23.

²⁰⁸ Hume, *Cultivation of Citrus Fruits*, 375-376; “Commissioner’s Order Will Fix Standards,” *Tampa Tribune*, August 17, 1912, 5.

also set new standards for the maturity of sweet oranges and other citrus hybrids like grapefruit.²⁰⁹

Because of his department's important responsibility to accurately oversee all citrus inspection in Florida, Nathan Mayo stringently enforced the green fruit law. Soon after taking office, Commissioner Mayo threatened to expose growers and shippers who were ripening immature fruit in tents and to report to fruit journals the individuals who engaged in such unlawful practices that made their fruit "deleterious and unfit for home consumption." In the 1923-1924 citrus season, Mayo toured the citrus belt and found, "...a large quantity of grapefruits in tents in various groves being artificially colored... This practice is a strict violation of the law and unless immediately discontinued, I shall report such conditions to the *New York Packer*, the *Produce Reporter* and other fruit journals..." The commissioner vowed to give up the names of individuals responsible and their brand names to advise the public of their unlawful treatment of fruit.²¹⁰

Mayo's enforcement of the law received praised initially, but its success was short-lived. Early market shippers began to beat maturity tests by treating their products with arsenic spray, which caused fruit to acquire the proper chemical content but not a satisfactory taste. To fight this abuse, the state legislature banned the use of arsenic on bearing trees and forbade the transportation of citrus containing arsenic in 1927 through four laws targeted at the citrus industry. Besides arsenic contamination, Governor John W. Martin signed laws that forbade the

²⁰⁹ Hume, *Cultivation of Citrus Fruits*, 376-378; La Godna, 37-38; George Chapin, "The Citrus Fruit Industry of Florida," *Manufacturer's Record* (December 1924), 226, "Newspaper Clippings" Folder, Box 10, NMP; Wilfred Wardowski, Steven Nagy, and William Grierson, eds., *Fresh Citrus Fruits* (Westport, CT: AVI Publishing Co., 1986), 26.

²¹⁰ "Mayo Plans Drastic Action," *The Florida Grower* (October 1924), 11.

transport of freeze-damaged fruit, made inspection tickets admissible evidence in the court of law, and extended early citrus fruit inspection from November 26 to December 1.²¹¹

While these laws expanded Mayo's oversights as agricultural commissioner, the enforcement of the laws would be attacked from numerous fronts. Such efforts demonstrated the power of opposition from Florida citrus growers. For example, Mayo's enforcement was questioned after two inspectors from the Department of Agriculture were tried for taking bribes from growers to pass green fruit. This fiasco forced Commissioner Mayo to fire the supervising inspector and personally take charge of citrus inspection in the 1928-1929 citrus harvest. Though some growers demanded inspection to be taken away from Mayo at this point, most just considered him too lax or the law inadequate.²¹² But more problems arose in 1929, when arsenic became the chemical of choice to battle the devastating Mediterranean fruit fly. Relaxing the arsenic spray law once again for the fly brought artificially-colored, unpalatable fruit to market. This, along with proof that the state-ordained acid tests were not effective in weeding out fruit low in juice content, brought disdain from citrus growers to Mayo.²¹³

Insinuating that he was in collusion with a dozen shippers who could pass green fruit to market, the *Lake Wales News* chastised Mayo for not enforcing the law during October 1930. The paper's editor provided the commissioner with a preview of the article and offered him the chance to write a rebuttal.²¹⁴ Mayo replied at a citrus meeting in Frostproof, Polk County, a

²¹¹ La Godna, "The Florida State Department of Agriculture," 39-41; Wardowski, Nagy, and Grierson, *Fresh Citrus Fruits*, 26; "Governor Signs Four New Citrus Laws," *The Florida Grower* (June 1927), 24; *Laws of Florida*, Vol. I (1927), 172-175, 371-377.

²¹² La Godna, "The Florida State Department of Agriculture," 41.

²¹³ *Ibid*, 43-44

²¹⁴ O.A. Brice, editor of the *Lake Wales News*, to Nathan Mayo, October 24, 1930, "Citrus Inspection" Folder, Box 6, NMP.

month later, claiming that “Pirate green shippers” who shipped early included some of the most reputable dealers in the state, including twenty-five houses of the Florida Citrus Exchange. He also noted that a federal inspector had worked in Florida the past two seasons. The commissioner did not “know his politics,” but he commended this inspector for his “thorough enforcement of the law.”²¹⁵ The *Lake Wales News* retaliated: “...after all the alibis and smokescreens, the fact still remains that the Florida citrus growers are again facing a ruinous year... [and] on Mr. Mayo’s shoulders must rest the blame for not enforcing the law under which prominent attorneys claimed he could have absolutely stopped.”²¹⁶

More problems arose concerning Mayo’s actions with canneries. Though Mayo expected fruit for canneries to be inspected, such fruit was excluded from actual law. This exclusion to some packinghouses meant that punishment was not guaranteed if green fruit was sent to canneries. In late 1930, the Committee of Fifty, an organization of Polk County growers who spearheaded the creation of a clearing house in the Florida Citrus Exchange, sent a telegram to Governor Doyle Carlton to take immediate action and impose green fruit laws on cannery imports. The committee’s secretary, F.E. Brigham, wrote to Governor Carlton:

THE COMMITTEE OF FIFTY OF THE FLORIDA CITRUS GROWERS CLEARING
HOUSE REPRESENTING EIGHTY PERCENT OF CITRUS GROWERS OF
FLORIDA... RESPECTFULLY URGE...TO IMMEDIATELY TAKE SUCH
ACTION...TO SECURE FROM THE COMMISSIONER OF AGRICULTURE THE
IMMEDIATE AND STRICT ENFORCEMENT OF THE GREEN FRUIT LAW AS IT

²¹⁵ Nathan Mayo, “Why Insist on Quality?” speech at Statewide Citrus Meeting, Frostproof, FL, Nov. 17, 1930, “Why insist on quality 1930” Folder, Box 7, NMP.

²¹⁶ November 20, 1930, *Lake Wales News*, “Citrus Inspection” Folder, Box 6, NMP.

IS WRITTEN AND HAS BEEN SERIOUSLY VIOLATED SPECIFICALLY IN THE
SHIPMENT OF FRUIT TO CANNERIES.²¹⁷

In response to the Committee of Fifty's demand, Commissioner Mayo called upon the clearinghouse's officials to meet and discuss citrus shipments to canneries, insinuating that the clearinghouse originally agreed to cannery fruit not being under the green fruit law. At this meeting, Polk County attorney (and future US Senator) Spessard Holland acted as legal counsel and reiterated Mayo's contention. Though Brigham and the Committee of Fifty still considered Mayo's enforcement lax and that the green fruit maturity test was not being applied to all fruit going from packinghouses to canneries, representatives from the canning industry commended Mayo's enforcement of the green fruit law, and the meeting adjourned without settling much.²¹⁸

Criticism continued to brew for Mayo over green fruit shipments. In 1931, another group of Winter Haven growers adopted a resolution to remove enforcement of the maturity law from the commissioner of agriculture and give it to a board of control.²¹⁹ Noting that supervision of this law, "...would bring grief to whomever it might be entrusted," Mayo retorted that this law has been, "...the source of more trouble to me than any other activity in the Department and personally, I would be better off without it." It also seemed singular to him that his critics were more concerned with placing blame for meager prices than shipping quality fruit in years with poor markets. To Mayo, early shipment decay and heavy exports from Puerto Rico and

²¹⁷ F.E. Brigham, secretary to Committee of Fifty, to Doyle Carlton, October 22, 1930, "Citrus Clearing House" Folder, Box 6, NMP.

²¹⁸ "Minutes of Green Fruit Meeting" (mimeographed), October 29, 1930, "Citrus Clearing House" Folder, Box 6, NMP; La Godna, "The Florida State Department of Agriculture," 46-47; James T. Hopkins, *Fifty Years of Citrus: The Florida Citrus Exchange, 1909-1959* (Gainesville: University of Florida Press, 1960), 99-100.

²¹⁹ "New Green Fruit Law," *Florida Grower* (January 1931), 21-22.

California were what depressed the 1930 markets, not his green fruit enforcement.²²⁰ Instead of proposing to relieve his Department of Agriculture from enforcement, Mayo suggested strengthening the law by revising acid and juice standards for oranges and grapefruits as well as enacting maturity standards on fruit being diverted to canning facilities, though he thought it was the canners' role to maintain the quality of citrus being shipped and processed by them. Mayo saw it as "...wise for the canning industry to adopt a system of labeling by which each individual canner would assume full responsibility for the product... offered to the public."²²¹

But continued anger over arsenic enforcement eventually created political adversaries for Nathan Mayo, particularly his pursuits to be state governor, a political power move not uncommon for state cabinet officers to attempt. In the gubernatorial election of 1928, Mayo had a decent shot at winning the Democratic ticket, which would have made him the shoe-in candidate for the general election, but he did not enter the race because he did not want to step on the toes of friends seeking the same office. In the gubernatorial election of 1932, Mayo theoretically had another shot, but his chances were hampered this time by his past citrus inspection scandals, which brought about a challenger wanting his office, Franklin King. Mayo's fight against green fruit and arsenic antagonized citrus interests enough to persuade some growers to bankroll campaign opponents. Citrus profiteers who faced court actions from Mayo's enforcement supported the Commissioner of Agriculture candidacy of Franklin King, a state senator from Orlando who ran against Mayo in the 1932 Democratic primary. The commissioner considered King's candidacy a front supported by the people who opposed his strict arsenic law

²²⁰ "Florida Green Fruit Law Statement by Commissioner Nathan Mayo," (mimeographed), January 13, 1931, "Citrus Inspection" Folder, Box 6, NMP; Nathan Mayo, "Florida Green Fruit Law," *Citrus Industry* (February 1931), 11, 14, 24, "Citrus Industry" Folder, Box 6, NMP.

²²¹ La Godna, "The Florida State Department of Agriculture," 48.

enforcement. King's campaign for Florida Commissioner of Agriculture was a retaliatory move after an injunction against Mayo's enforcement was struck down in federal court. Even so, the size of the anti-Mayo vote indicated that dissatisfaction in the citrus situation was substantial. In an election in which the incumbent should have been safe from defeat, the outcome was not a landslide, for Mayo gained 61 percent of the vote and won by 28,000 out of the 232,000 votes cast. Mayo carried big citrus counties including Highlands, Hillsborough, Orange, and Polk, convincing growers and newspapers that King's candidacy was just a vendetta against the commissioner's rigid enforcement of citrus maturity laws. Nevertheless, the election was not a complete endorsement for Mayo. It showed that growers, for the most part, favored strict maturity laws, but it also showed that growers did not favor all of Mayo's actions in citrus matters.²²²

Instead of running against Nathan Mayo in elections, opponents subverted his authority over the industry through new state laws. This is seen in a new citrus code enacted into state law in 1935 which ultimately weakened the commissioner of agriculture's control over certain aspects of the Florida citrus industry. Through this law, the Florida Citrus Commission, an 11-member governor-appointed body headquartered in Lakeland, was established and made legally responsible for creating and updating citrus industry regulations. Though Mayo retained the task of inspecting fruit and enforcing inspection laws, the commissioner lost much of his life and death power over making the rules and regulations of the Florida citrus industry.

²²² La Godna, "The Florida State Department of Agriculture," 50-52; "Congratulations," *Citrus Industry*, June 1932, "1932 Campaign Arsenic Spray Law Green Fruit Shippers" Folder, Box 7, NMP; "Fight over Arsenic," *Florida Grower* (October 1931), 17.

In “An Act to Stabilize and Protect the Citrus Industry of the State of Florida and to Promote the General Welfare of Such Industry and of the State of Florida,” the Florida legislature created the state citrus organization “to be known as the Florida Citrus Commission” to administer the state’s code of regulations for the citrus industry. “Declared and created a corporate body,” this commission was granted the “power to contract and to be contracted with, to have and possess all the powers of a body corporate for all purposes necessary for fully carrying out the provisions and requirements of this Act.” The duties of Florida Citrus Commission were broad: “to adopt and from time to time alter, rescind, modify and/or amend all proper and necessary rules, regulations and orders” and to also “investigate violations and provisions” of Florida citrus codes. Acting as the state of Florida’s “general supervisory authority over the administration and enforcement” of citrus laws, this commission was allowed to organize a full-scale office with the power to hire “a Manager and/or Secretary and such attorneys, clerks, and employees as it deems necessary,” and to buy “or authorize the purchase of all office equipment and supplies and... all other necessary expenses in connection with and required for” properly carrying out provisions to the code. Ordered to adopt a corporate seal to authenticate its proceedings, The Florida Citrus Commission had “full and plenary power to establish to establish standards for State grades of citrus fruit... and may prescribe rules, regulations, and/or orders governing the marks or tags” on all citrus fruit and fruit containers coming out of the sunshine state.²²³

In other words, the Florida Citrus Commission received the legal authority to create, sanction, and control industry-wide procedures in Florida citriculture, effectively bypassing

²²³ *Laws of Florida*, Vol. I (1935), 213-214, 217, 219.

much of Mayo's authority in overseeing the industry. Because of the 1935 Florida citrus codes, Mayo became as much an employee as an employer in the lucrative industry. The creation of the Florida Citrus Commission was a direct response from Florida citrus growers to undermine the authority of Nathan Mayo in their affairs. Instead of the Commissioner of Agriculture, the Governor of Florida appointed the members to this commission. Florida citrus growers also had the right to petition the Governor's choices for other qualified candidates.²²⁴

Besides squashing Mayo's ability to choose who administered the regulation of the Florida citrus industry, the creation of the Florida Citrus Commission reimagined how Florida's citrus-producing regions were represented in the state government. Seven citrus districts made up of the state's citrus-growing counties were created and established. Each district had one member representing them on the commission, except for the district that represented Polk County which had two representatives, and the other three remaining appointees to the commission were representatives of the state at large.²²⁵ To be appointed into the Florida Citrus Commission, one not only had to be a full-time resident citizen of Florida but a proven, practical citrus man who had been "actively engaged in growing, or growing and shipping, of citrus fruits... for a period of five years immediately prior to his appointment..." He was required to have "during said period derived the major portion of his income therefrom, or [have] been the managing or directing head of a corporation, partnership, firm, or other business unit" dealing with citriculture. While members could not be connected as officers or paid employees to citrus

²²⁴ Ibid, 216.

²²⁵ The Florida Citrus Commission districts broken up by county were: District 1 (Hillsborough, Pinellas, and Manatee counties), District 2 (Citrus, Sumter, Lake Hernando, and Pasco), District 3 (Alachua, Putnam, St. Johns, Flagler, Marion, Levy, Seminole, and Volusia), District 4 (Osceola and Orange); District 5 (Brevard, Indian River, St. Lucie, Martin, Palm Beach, Broward, and Dade); District 6 (Sarasota, Hardee, Highlands, Okeechobee, Glades, DeSoto, Charlotte, Lee, Hendry, Collier, and Monroe); and District 7 (Polk). The biggest citrus producer in Florida, Polk County had two representatives on the Florida Citrus Commission. Ibid, 218-219.

packing, shipping, and marketing agencies while serving their two-year terms, members had to at one time been directly involved in managing large-scale citrus operations. Any grove owners who resided out of state, or any small-time growers or grove-owners who cultivated citrus as side income, could not serve on the Florida Citrus Commission.²²⁶

Because of these mandatory qualifications to be appointed into the Florida Citrus Commission, the large-scale, highly-capitalized growers became the leaders of the Florida citrus industry's future. But the revised Florida citrus code did not remove all responsibility for Nathan Mayo and future Florida Commissioners of Agriculture in the state's citrus matters. With any investigations into citrus code violations, the Florida Citrus Commission still had "to report its findings and/or recommendations in connection therewith to the Commissioner [of Agriculture]." Mayo and his department's inspectors were still authorized "to enter and inspect personally...any place within the State of Florida where citrus fruit is being prepared, packed, loaded or stored for shipment" and "to forbid or prohibit the shipment or sale of any citrus fruit found to be in violation of any of the provisions" of state and federal laws. Though he could not directly manage how the industry developed, Mayo and his department were still expected to carry out their most important role in the business, which was to inspect Florida citrus fruits headed to markets and prosecute any violators of citrus rules and regulations. Despite being superseded the Florida Citrus Commission, Mayo ironically was at first still responsible for paying commission representatives. Though the commission would be financed not by the state's treasury but by a levy against growers, the treasury at first decided to pay the Florida Citrus Commission through the Florida Department of Agriculture's general inspection fund. Mayo had

²²⁶ Ibid, 215-216.

to approve the vouchers that drew the commission's salaries and expenses before their payment was finalized by the state comptroller.²²⁷

Though his department was still responsible for inspecting citrus fruits for maturity and enforcing all violations to state maturity standards, the 1935 citrus code placed the responsibility of formulating and revising mature fruit standards into the control of the Florida Citrus Commission, a legal change inspired by Mayo's mishandling of the green fruit situation in prior seasons. Unless they possessed certification from the United States Department of Agriculture or inspection and temporary certification from Commissioner Mayo, growers could not use dyes or chemicals of any sort to artificially color citrus fruits, particularly oranges. It was unlawful for any person to apply coloring to oranges unless the fruit passed the requirements of the state maturity tests in addition to "minimum requirements for total soluble solids in the juice and for ratio of total soluble solids to anhydrous citric acid." This law concerning the ratio of total soluble solids within citrus fruit was determined through the commission by Brix Hydrometer readings, results from a device that determined the sugar content or degrees Brix of the fruit.²²⁸ Named after German mathematician and engineer Adolf Brix, degrees Brix is the scientific unit for the specific gravity of liquids. The specific gravity of an orange's juice was figured according to a special scale of sugar solutions that later became the standard measurement of orange juice concentrate by the mid-20th century.²²⁹

The 1935 citrus codes also gave all power over the marketing of Florida citrus products to the Florida Citrus Commission, despite Mayo's past success as a promoter and advertiser of

²²⁷ Ibid, 217, 218, 220-221.

²²⁸ Ibid, 263-266.

²²⁹ John McPhee, *Oranges* (New York: Farrar, Strauss, and Giroux, 1967), 129.

the state's agricultural potential. Because of "economic waste... being fostered by lack of proper advertising and dissemination of information necessary for the development and promotion of the sale of [Florida] oranges," an excise tax of one cent was levied and imposed on each standard packed box of Florida oranges, the State of Florida's first attempt to create an "Orange Advertising Fund" that would help promote the deliciousness, health benefits, and overall sale of Florida oranges nationwide. Rather than Commissioner Mayo, the Florida Citrus Commission was given the power to "plan and conduct a campaign for commodity advertising, publicity and sales promotion to increase the consumption of oranges," along with the right to "contract for any advertising, publicity, and sales promotion service." The commission was also given the power to "administer the taxes levied and imposed" for the state's orange advertising fund," allowing this board to "prescribe suitable and reasonable rules and regulations for the enforcement of the provisions" for this act. Under the rule of law, every orange handler in Florida had to "keep an accurate record of all oranges handled by him" and "file with the Commission a return under oath...stating the number of standard packed boxes handled by [the] handler in the primary channel of trade." This tax money for the advertising fund "levied and collected... shall be paid into the state treasury on or before the 15th day of each month... evidenced by stamps to be known and designated as 'Orange Advertising Stamps,'" stamps that were affixed to the grade certificates of inspectors from the Florida Department of Agriculture. Any grower who evaded or delayed the payment of these taxes risked being found guilty of a misdemeanor and fined up to \$500 dollars or imprisoned for up to 90 days.²³⁰ Similar excise

²³⁰ *Laws of Florida*, Vol. I (1935), 234-239.

taxes were passed into law in 1935 for Florida grapefruit and tangerine boxes that were also collected by the Florida Citrus Commission.²³¹

Through these citrus codes, a power shift occurred within the Florida citrus industry, and it certainly shifted to favor the will of the Florida Citrus Commission. Commissioner Nathan Mayo lost his elastic legal power to determine the course of the industry into the mid-20th century. By looking at the individuals who comprised the first board to the Florida Citrus Commission, it is evident that big citrus growers made of the ranks of this commission right from the beginning. This is seen in the minutes of Florida Citrus Commission's inaugural meetings. The first men appointed into the commission by Governor David Sholtz were L.P. Kirkland, L.L. Chandler, A.S. Herlong, John S. Taylor, B.E. Smith, C.E. Stewart, W.L. Story, John M. Knight, Earl W. Hartt, John D. Clark, and Thomas B. Swann.²³²

These first appointees included some of the biggest citrus producers in the state, particularly its representatives from Polk County, Lynn Parker Kirkland and Thomas Burnett Swann. The Florida Citrus Commission's first chairman was Lynn Parker Kirkland of Winter Haven. Kirkland began his career in 1916 as a fertilizer agent upon entering the citrus business as a grower, and after many years operating as a successful grower, he helped Dr. Charles W. Adams and others form the Adams Packing Association in 1927. He served as the association's Vice President for nearly a decade before his appointment into the first Florida Citrus

²³¹ Ibid, 240-245, 246-251.

²³² "Minutes of Meeting of Florida Citrus Commission Held at Hotel Lakeland Terrace in Lakeland, Florida, at Ten O'clock A.M., Monday, September 16, 1935," Minutes of FCC Meetings, September 10, 1935-December 27, 1935, 9, Minutes, 1935-2015, Florida Citrus Commission, Department of Citrus, State Archives of Florida, Tallahassee, Florida.

Commission.²³³ Thomas Burnett Swann was also located in Winter Haven. Swann's work in the citrus industry began in 1929 when he took over management of his family's groves. He later became one of the first advocates for increased cooperation and organization among Florida citrus growers. Well after his appointment into the 1935 commission, Swann worked for increased cooperation and organization in the Florida citrus industry, later becoming one of the organizers of the Florida Citrus Mutual. He also served as President and Director of the Superior Fertilizer Company, Trustee of Florida Presbyterian College in St Petersburg, Director and Member of the Executive Committee of General Telephone Company of Florida, Director of the Exchange National Bank of Winter Haven, and President of Winter Haven Hospital, where the major complex of the medical facility was named in his honor.²³⁴

Success and diversification in citrus were not just showcased by the careers of Polk County's representatives in the Florida Citrus Commission. Albert Sydney Herlong also had many business interests and a long history in Florida citrus. Moving to Florida in 1897, Herlong grew citrus in Lake County and eventually established one of the largest citrus firms of its day, the A.S. Herlong Company. Considered a pioneer in the growing, marketing, and development of cooperatives in all segments of the Florida citrus industry, Herlong also exemplified the diversification of big citrus growers' business interests in the early 20th century. Besides later serving as chairman to the Florida Citrus Commission, Herlong also served as a chairman of the

²³³ "Lynn Parker Kirkland (1886-1941)," Florida Citrus Hall of Fame. <http://floridacitrushalloffame.com/inductees/lynn-parker-kirkland/>. [accessed April 10, 2018].

²³⁴ "Thomas Swann (1897-1977)," Florida Citrus Hall of Fame. <http://floridacitrushalloffame.com/inductees/thomas-swann/>. [accessed April 10, 2018].

board for Citizen National Bank of Leesburg and as the director for the Gulf Railroad, Foremost Fertilizer Company in Leesburg, and the B&W Canning Company in Groveland.²³⁵

John S. Taylor was an even more formidable and politically involved citrus grower before being appointed into the Florida Citrus Commission in 1935. Born in 1871 near Indian Rocks and Largo in what is now Pinellas County, Taylor grew up working on his family's orange groves and packing plant. He built his first packinghouse in 1902, originated his "Black Diamond Brand" citrus label in 1910, and served from 1905 to 1910 as a Hillsborough County Representative in the state legislature, where he advocated for the separation of Pinellas from Hillsborough County. Taylor was dubbed "the Father of Pinellas County" because his advocacy helped create Pinellas County in January 1912. That same year, he was elected into the Florida State Senate, where he pushed for pro-citrus legislation. From 1915 to 1923, Taylor served as chair of the Pinellas County Board of Commissioners. By 1925, Taylor became president of Florida State Senate, and in 1928, he made an unsuccessful bid to become Governor of Florida. While in the legislature, Taylor's chief economic pursuit remained his orange grove and packing plant, which were mainstays for the Largo economy throughout the 1920s and the early half of the Great Depression. He served as President of the Bank of Clearwater, Steward of Largo Methodist Church, and as a member of the Democratic National Committee in 1932. Besides appointment into the Florida Citrus Commission, Taylor also became President of the Florida Citrus Exchange in 1935, but unfortunately, he died a year later after taking both offices.²³⁶

²³⁵ "Albert Sydney Herlong (1866-1963)," Florida Citrus Hall of Fame.

<http://floridacitrushalloffame.com/inductees/albert-sydney-herlong/>. [accessed April 11, 2018].

²³⁶ "John S. Taylor (1871-1936)," Florida Citrus Hall of Fame. <http://floridacitrushalloffame.com/inductees/john-s-taylor/>. [accessed April 10, 2018].

The appointment to the Florida Citrus Commission of Barney Kilgore, one of Mayo's most noteworthy opponents in citrus matters, best exemplified this power shift taking place in the industry by the mid-1930s. Born in Pinellas County in 1877, Barnard "Barney" Kilgore started his first grove in 1897 after the Great Freeze. This grove was only the first of many that he acquired in what came to be known as one of the finest collections of groves in the country. As for the man who assembled the collection, Kilgore was widely recognized as the leading grower and packinghouse operator in Clearwater for more than 40 years. He worked in Tallahassee on behalf of citrus legislation and was recognized as one of the most influential men in the industry by the 1930s, which was most evident in the important role he played in the formation of the Florida Citrus Commission. Besides contributing to the formulation and the passage of the legislation that created this agency, when the organization became operational, Kilgore was appointed to serve on the first Florida Citrus Commission. Possessing unusual powers of observation as well as a quick analytical mind, Kilgore applied these skills to the art of citrus growing, which helped him develop citrus practices, promotions, and protections in all phases of the industry but also caused him to butt heads with those who did not recognize his opinions on citrus matters.²³⁷

This was evident in Kilgore's dealings with Mayo in the years prior to the 1935 citrus codes. Kilgore was not always an enemy of Mayo's policies, for he commended Mayo's enforcement of the green fruit law despite accusations of lax citrus inspection by the Florida Department of Agriculture along with the cannery fiasco in 1930. But by 1931, Kilgore saw Mayo's enforcement of citrus maturity laws as too strict and went to court with other growers

²³⁷ "Barnard Kilgore (1877-1961)," Florida Citrus Hall of Fame. <http://floridacitrushalloffame.com/inductees/barnard-kilgore/>. [accessed April 11, 2018].

and shippers to seek an injunction against Mayo's enforcement of the anti-arsenic spray law. Even though a federal panel of judges upheld the law, citrus shippers forming the Fruitmen's Association, where Kilgore was vice president, took issue with Mayo's enforcement even after the federal decision. This battle between Kilgore and Mayo raged into 1932, the year when Franklin King challenged Mayo for the Commissioner of Agriculture nomination. To tie King's candidacy to growers who were angry at his anti-arsenic enforcement, Mayo procured a copy of a letter written to a railroad official seeking his support for King on May 5, 1932, by C.A. Stewart, the general sales manager to one of the largest citrus growers in the state, Latimer "Latt" Maxcy in Polk County. Because Mayo had earlier secured court action not only against L. Maxcy, Inc. but R.D. Keene and Barney Kilgore, this letter was used as evidence that these three men were behind King's candidacy and that they were conducting a vendetta against Mayo.²³⁸

The feud between Mayo and Kilgore continued after the 1932 campaign. In September 1932, Mayo issued a stop order prohibiting shipment and threatening to destroy about 25,000 crates of citrus from Kilgore's groves in Largo because the fruit had been treated with arsenic. Kilgore claimed that he did not use arsenic spray and that some enemy had spot sprayed his trees, and he maintained that a citizen's committee supported his contention. But the sprayed fruit could not be destroyed unless it was shipped immature or with an appreciable arsenic content, so on December 18, 1932, after being held for three months, Mayo allowed Kilgore's

²³⁸ "Happenings in the Citrus World," *Florida Grower* (September 1931), 26; "Fight over Arsenic," *Florida Grower* (October 1931), 17; "Congratulations," *Citrus Industry* (June 1932), 10; La Godna, "The Florida State Department of Agriculture," 50-51.

fruit to be shipped. Considering their contentious relationship, one must wonder whether Mayo was just doing his job or carrying out his own vendetta against Kilgore.²³⁹

By 1935, Mayo and Kilgore had personally ended their feud after Mayo appointed an inspector in the St. Petersburg area who had Kilgore's written recommendation, a shrewd move for Mayo that forestalled any criticism by Kilgore of citrus inspection in and around Pinellas County. But despite renewed amicability between these two men, it was Kilgore that had the last laugh. On September 14, 1936, Barney Kilgore was appointed by Governor David Sholtz as a member of the Florida Citrus Commission from Citrus District 1 to replace John S. Taylor who died earlier that year.²⁴⁰ Once he became a member of the Florida Citrus Commission, Kilgore lawfully superseded Mayo in authority over Florida citrus affairs. Months prior in the commission's inaugural meetings, the Honorable Nathan Mayo along with the State Chemist and Chief of the Inspection Bureau J.J. Taylor already pledged "100% cooperation from the Department of Agriculture and the Inspection Bureau and congratulated the members of their appointments to the Commission."²⁴¹ Mayo plainly bowed out of directing the Florida citrus industry with this sentence, accepting the authority of the Florida Citrus Commission as legal and superior to his office's powers over citrus matters. He accepted the restricted but still important responsibilities for his department outlined in the 1935 citrus codes without fighting, a decision influenced by years of political and personal fighting with disgruntled citrus growers.

²³⁹ "Kilgore Fruit Released," *Florida Grower* (January 1933), 24; Julian Fant, "Explanation of Arsenic Spray Decision," *Florida Farmer* (April 1932), 6; La Godna, "The Florida State Department of Agriculture," 53.

²⁴⁰ "Florida Citrus Commission Minutes of Meeting September 16, 1936," *Minutes of FCC Meetings, January 9, 1936-December 30, 1936*, 257, Minutes, 1935-2015, Florida Citrus Commission, Department of Citrus, State Archives of Florida, Tallahassee, Florida.

²⁴¹ "Minutes of Meeting of Florida Citrus Commission Held at Hotel Lakeland Terrace in Lakeland, Florida, at Ten O'clock A.M., Monday, September 16, 1935," *Minutes of FCC Meetings, September 10, 1935-December 27, 1935*, 11, Minutes, 1935-2015, Florida Citrus Commission, Department of Citrus, State Archives of Florida, Tallahassee, Florida.

Nonetheless, with years of success in citriculture made mandatory qualifications to be appointed into a Florida Citrus Commission seat, big growers like Barney Kilgore not only became the political face but the most authoritative agency in the industry. Though the Honorable Nathan Mayo was domineering in many of Florida's agricultural interests, power and authority in Florida citrus matters effectively shifted away from Mayo, the champion of small, common farmers in the state, and into the control of Florida's largest citrus growers. Obviously not pleased with Mayo's handling of fruit matters, citrus growers in Florida proved that even the most constitutionally authoritative politicians are not permanently safe from reckoning. Years before the popularization of orange juice concentrate, big growers in the Florida citrus had already begun controlling the fate of the industry, finally undermining through criticism, political pressure, and legislation one of the most powerful politicians to ever serve for the State of Florida.

CHAPTER SEVEN: CONCLUSION

Florida citrus farming industrialized in the early 20th century. With scientists moving into the state and creating experiment stations, citrus-related research was emphasized and improved. Mechanization in packinghouses streamlined preparation for consumers. As it industrialized, big citrus growers gained more control of the industry. With capital to invest in new technologies and innovations, big growers also had the wherewithal and support to control their labor force, avoiding the activity of national labor unions. Big growers successfully resisted the cooperative efforts of smaller citrus farmers in the state. They also captured the political power necessary for to control the regulations of the industry, making sure the industry was self-regulated, paid for by the growers themselves, not by government subsidies. In the early 1900s, the citrus industry steered away from being an extension of small-farm republicanism. It turned into an agricultural industry dominated by big growers.

The advent of concentrate amplified this change. Robert Hutchings argued that concentrate was the industry's saving grace, the invention that helped the flailing Florida fresh-fruit industry experience a new life. It was the invention that rid the industry of a longstanding financial problem, dealing with surpluses in fruit.²⁴² In the 1930s, big citrus men invested more of their money and citrus into juice making. By the early 1940s, scientists at the Lake Alfred Citrus Research Center began developing precursors to what became frozen orange-juice concentrate, where the process was perfected before being patented for public use in 1948. A decade later, the vast majority of oranges grown in Florida were being converted into

²⁴² Robert M. Hutchings, "Consuming Nature: Fresh Fruit, Processed Juice, and the Remaking of the Florida Orange, 1877-2014" (PhD dissertation, Carnegie Mellon University, 2014), 8-12.

concentrate. Packinghouses were replaced with enormous concentrate plants, actual factories that manufactured frozen concentrate from fresh oranges and grapefruits. These plants resembled an oil refinery or an automobile factory, complete with tall assemblages of steel supports, catwalks, and looping pipes. The individual orange meant nothing in the concentrate process. Growers now cared about the number of pounds of sugar produced per acre, not the quality of the oranges on the trees. They sold oranges as “pounds-solids,” not as oranges anymore.²⁴³ As soon as it arrived at the plant, the fruit was boiled to high viscosity in a vacuum, separated into several components, reassembled, flavored, and then frozen solid to become concentrate. It not only remade the industry but remade citrus fruits. Concentrate derived more from the laboratory than the tree. In order to make a uniform product, scientists constantly mixed the juices, balancing acids and sugars to make all concentrate taste the same, to be consistent in both flavor and color. With concentrate, many citrus varieties disappeared. Instead of many kinds of oranges, there are now just a few kinds grown for their juice making (Navel, Hamlin, Pineapple, Ambersweet, and Valencia).²⁴⁴ With surplus citrus turned into concentrate, the process effectively erased the influence of time on citrus production. It not only smoothed differences in harvest output between seasons, it helped growers better regulate citrus price. Growers wanted freezes to periodically occur, for they gave growers a legitimate reason to inflate citrus prices, sell surplus, and reap more reward from America’s insatiable orange juice consumption. Concentrate was not wholly responsible for the industry’s transformation, but it was an invention that allowed growers to solidify their control over the industry.

²⁴³ McPhee, *Oranges*, 126-127.

²⁴⁴ D.P.H. Tucker, S.H. Futch, F.G. Gmitter, and M.C. Kesinger, *Florida Citrus Varieties* (Gainesville: University of Florida, Institute of Food and Agricultural Sciences, 1998), 6-16; “What citrus products are primarily grown in Florida?” Florida Department of Citrus. <https://www.floridacitrus.org/oj/fact/what-citrus-products-are-primarily-grown-in-florida/>.

In *Seeing Like a State*, James C. Scott noted imperial pretensions accompanying large-scale agriculture in the 20th century. Such pretensions can be applied to the Florida citrus industry. By examining scientific farming, industrial agriculture, and capitalists markets, Scott saw just as much agency of homogenization, uniformity, grids, and simplification in highly capitalized agriculture as he did in a state. Because it was modern, industrial, and scientific, early-20th-century Florida citrus was arguably imperialistic, especially if one were to look at the actions of advantageous and successful growers as a domination or a conquering of the industry and landscape. Similar to the architects and designers of cities, university-educated scientists like H. Harold Hume acted as advisors to the industry. They came to Florida to work and learn, and their work influenced continued expansion and development of the industry. Their research, publications, and roles in creating a university-affiliated citrus experiment station promoted further biological innovation, which in turn increased harvest output and new citrus plantings. Their influence caused more and more acreage to be tamed and redesigned for groves. Mechanization improved packinghouse efficiency, but machines made a notable impression on labor costs too. Replacements to hired labor in packinghouses, machines saved money for big growers who could invest in them, money that helped their operations persevere through difficult financial times. These growers' management of labor also showed an undercurrent of control; workers in groves and packinghouses were turned away from joining unions. Growers eventually suppressed most union activity with help from law enforcement, the KKK, and other allies. In fact, the small farm republicanism of African-Americans in citrus could be seen as an act of resistance to the localized hegemonic power of large-scale citrus operations. Big growers withstood and competed against the collective efforts of smaller growers, stymying the impact of

the Florida Citrus Exchange on the industry. They also pushed into state law the Florida Citrus Commission, a governor-appointed committee of big growers that decided on industry rules and regulations. All of these trends supported the greater capitalistic need to simplify Florida's fresh citrus fruit industry in the early 20th century. The hybridization, mono-cropping, use of fertilizers and pesticides, mechanization, standardization, and increasing capital intensive needs of the industry in this era showed that the industry was transforming into high-modernist agriculture long before concentrate. Florida citrus had already formed its own capitalistic paradigm, and it already did not recognize any knowledge or ideas that hindered the substantiation of this paradigm in reality.²⁴⁵

Detailing the overall history of oranges and Florida citrus industry activity in the 1960s, John McPhee's *Oranges* identified two big growers who had not only found incredible success with citrus in the early 1900s, but capitalized on their success by starting other ventures and becoming highly influential in local and state politics. These two growers represent the last of the citrus barons, or more accurately, big growers who continued in citrus because they started agribusiness empires. The immense success and motivations of these growers relate to the imperial undercurrents of modernist agriculture in the 20th century. Both of these men were not only experienced farmers but managers and entrepreneurs who built impressive reputes behind their names. While researching in Florida, McPhee wondered if any citrus barons from Florida's fresh-fruit days still existed after the concentrate boom. Wherever he went, he asked people if

²⁴⁵ James C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998), 8, 264-268.

they could think of a remaining example. In every instance, they immediately said to him, “Ben Hill Griffin, of Frostproof, Florida.”²⁴⁶

Ben Hill Griffin Jr. exemplified the longstanding power big citrus growers obtained in the 20th century. Griffin adapted his citrus business to shift toward concentrate production. By the time McPhee interviewed him, Griffin was still a major orange grower, fresh-fruit shipper, and packer, but he also owned his own concentrate plant. He told McPhee that he made almost every citrus product, “from old-fashioned, unfrozen canned orange juice to the pulp that is put in the orange drinks sold in Broadway theaters.” He was worth about \$30 million at the time (around \$220 million in 2018). He owned six thousand acres of citrus groves, some packinghouses, a concentrate plant, and a sixteen thousand acre cattle ranch along the Peace River in Hardee County. He had a bank in Avon Park and a car dealership and fertilizer plant in Frostproof. He was also active in state politics. “A conservative Democrat with anti-segregationist convictions,” Griffin served eight years in the Florida House of Representatives and four years in the Florida Senate, serving on the Finance and Taxation, the Ad Valorem Tax, and the Air Pollution committee. He also chaired the Agriculture and citrus subcommittees, both vital positions to the Florida citrus industry. His family followed in his footsteps, for even after his passing in 1990, three of Griffin’s grandchildren remained active in in Florida politics. Griffin exemplified how some big citrus growers were in the perfect position to not only capitalize on concentrate but to expand their reputation to mythic proportions.²⁴⁷

²⁴⁶ McPhee, *Oranges*, 140.

²⁴⁷ McPhee, *Oranges*, 140-141, 148-149. “Ben Hill Griffin (1910-1990),” Florida Citrus Hall of Fame. <http://floridacitrushalloffame.com/inductees/ben-hill-griffin/>.

Supposedly born in Tiger Bay during a hurricane in 1910, Griffin grew up in the early-20th-century citrus industry and witnessed the success of family in Frostproof, particularly his father, Ben Hill Griffin Sr., and his uncle, Latimer “Latt” Maxcy. McPhee was told that the domains of Ben Hill Griffin were so endless that Griffin himself had no idea how many groves he owned; his Uncle Latt had no idea how many acres he had either. Maxcy was not born in Florida or in a hurricane. Born in South Carolina in 1887, Maxcy grew up in Mulberry. He worked in phosphate mines, operated heavy equipment, and moved to the northeast US in the early 1910s, earning enough to buy land along Lake Reedy in Frostproof. He sold his grove holdings in 1917 to the Florida Citrus Exchange and organized his own packing company, the Lake Reedy Packing Company, Frostproof’s first packinghouse, paving the way for Polk County to buzz with citrus production. In 1925, he closed this packing company’s records, formed a new corporation Latt Maxcy, Inc., and expanded into banking, joining over twenty other businessmen to open Citizens Bank in Frostproof. By 1931, Maxcy opened a citrus canning facility and juice-making plant next door to his packinghouse. His desire to improve juice making made him an antecedent of frozen concentrate. His citrus juice brands gained fame in the 1950s with the sale of bottled juices, "Silver Nip" grapefruit juice and "Golden Nip" orange juice.²⁴⁸

Like Griffin, Maxcy diversified his business interests. In 1935, he began raising cattle and acquired eighty acres of land in Osceola County. This land would later become a ranch larger than the state of Massachusetts. Over 150,000 acres and stretching from the Kissimmee River to Vero Beach, Maxcy’s ranch was just another addition to his business empire. During Governor Millard F. Caldwell's administration in the 1940s, Maxcy served on the Florida Citrus

²⁴⁸ Latimer ‘Latt’ Maxcy,” Florida Citrus Hall of Fame. <http://floridacitrushalloffame.com/inductees/latimer-latt-maxcy/>. [accessed July 20, 2018].

Commission. He was largely credited with what became known as the “Maxcy Plan,” the idea to create a trade association to publish, advertise, and lobby on behalf of Florida citrus growers. His plan sparked the formation of the Florida Citrus Mutual in 1948. As of 2018, the Florida Citrus Mutual is still in operation and has nearly 8000 members, the largest cooperative association for citrus in the state. Maxcy was its first president. In 1949, Maxcy sold his citrus holdings to Clinton Foods, Inc. for around \$5 million, but became vice president of its operations in Florida. He turned Clinton Foods’ Snow Crop Frozen Food division into a profitable operation, marketing Snow Crop Frozen Orange Juice as cheaper but tastier alternative to fresh-squeezed orange juice. In 1956, Minute Maid bought Snow Crop. In 1963, Maxcy incorporated his land holdings into the Latt Maxcy Corporation, a \$300 million conglomerate based in Lake Wales that engaged in citrus, cattle ranching, and real estate development long after his death in 1971.²⁴⁹

Though they were related and both titans in Florida citrus, Griffin and Maxcy did not get along. Griffin graduated from Frostproof High School and attended the University of Florida, but outside of a ten-acre grove given to him by his father, Griffin worked from the ground up. McPhee was told that when Ben Hill Griffin started out, he slept under his truck. His first wage-paying position was at the Latt Maxcy packinghouse, but his uncle Latt never gave him a thing, not so much as one sick tree. Griffin took over much of what Maxcy owned but he did not acquire it directly and probably never could have. When Macy sold his plant and groves to Clinton Foods, all they cared for was his groves and let the concentrate plant deteriorate. Griffin

²⁴⁹ McPhee, *Oranges*, 141; “Latimer ‘Latt’ Maxcy,” Florida Citrus Hall of Fame; “History,” Florida Citrus Mutual website, <http://flcitrusmutual.com/about/fcmhistory.aspx>. [accessed September 11, 2018]; “Latt Maxcy History,” Latt Maxcy Corporation website. <http://www.lattmaxcy.com/heritage/index.html>. [accessed September 11, 2018].

offered over a million dollars for the facilities and took over the plant.²⁵⁰ Griffin and Maxcy's strained relationship showed that the famous individualism of Florida citrus growers lived on into the later half of the 20th century. Despite their dislike for one another, both of these men were industrialized growers who remained relevant and powerful even in the age of concentrate, when corporate subsidiaries like Minute Maid began entering the citrus industry. They not only became powerful in the citrus industry but influencers in local and state politics. They signified the complete takeover; it was a fact that big growers' interests dominated the Florida citrus industry.

Growers with the most disposable capital, the capital that gave them the ability to invest in biotechnologies, machines, business strategies, or other potential benefits to their operations, were able to survive the constant flow of changes and challenges that transcends all of Florida citrus history, and exploit this key to survival. More business-minded and managerial than their 19th-century counterparts, it was inevitable that early-20th century citrus growers sought for the efficiency and productivity idealized in industrial farming.

In the 1920s, Hume noted the characteristics of industrialization happening in Florida citrus. His observations summarize the surprising amount of advancements made after the 1894-1895 freezes. "The intervening years have seen the industry standardized in every department. Citrus culture has become a great specialized commercial industry and holdings of hundreds of thousands of acres are common." Gone were "the numerous varieties and the planting-lists" of the late 19th century. Instead, a brief list of fruit varieties remained in the industry, "sufficient only to cover the harvest season." Gone too were the individually-operated, crudely-equipped

²⁵⁰ McPhee, *Oranges*, 146.

packinghouses. They were replaced “by community packing plants in which fruits are handled in large quantities... for greater uniformity in the product marketed and better returns to the grower.” The “old-time sprays... that often did more harm to tree than to insect life” were also replaced by more efficient mixtures.” However, Hume also noted its constant flux. “New diseases and insects have appeared that, fortunately, have been conquered or controlled. The old problems, never quite solved, remain and to these problems new ones, either already solved or in process of solution, have been added.” Despite the recurrence of challenges, Hume saw that the industry had “reached a higher stage of development along all lines.” Methods of combating insects and fungous disease, of tillage, fertilizing, irrigating, frost-protection, handling, and marketing citrus crops were far in advance of those in the 19th century.²⁵¹

Hume embraced the advances that came out of the early-20th-century and saw them as necessary adaptations to a growing agricultural enterprise in Florida. But in the minds of big growers, embracing advancements were pretenses to bigger ideals or motivations. Ben Hill Griffin Jr. was known for certain characteristics, for his folksy small business mindset, enormous work ethic, and some frugality, fairness, and intuition. But Ben Hill Griffin told John McPhee, “When I was a small boy playing marbles, I learned that the most important thing is position. If you get in the right position, you can clear up some marbles out of the ring.”²⁵² Advantage was what big growers wanted in the industry, and in an industry that was becoming more and more capital intensive, big growers embraced any technology or practice that earned or saved them money. Dr. Louis Gardner McDowell reiterated this point, albeit more negatively. Known as “the patron saint of concentrate,” McDowell, along with Dr. E. L. Moore and Dr. C.D. Atkins,

²⁵¹ Hume, *Cultivation of Citrus Fruits*, v.

²⁵² McPhee, *Oranges*, 144.

patented the “cutback” process of concentrate in 1948, the process of adding fresh juice to highly concentrated juice. It was the process that made concentrate tasty and sellable. Though a proud Floridian, McDowell noted that Florida had no romance about its citrus industry despite its long history within the state. “California has the original Navel Orange tree in a state park or somewhere. Nobody saves old trees here. Pink grapefruit developed in Bradenton. Parson Brown Oranges in Webster. And so on. Nobody cares.”²⁵³ In Florida, growing citrus was just about making money. The changes discussed in this thesis sure show that this was definitely the case for the early-20th-century Florida citrus industry.

²⁵³ Ibid, 126.

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