The Training of a Human Plant:
Luther Burbank and American Society in the Early Twentieth Century

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Abstract

Before his death in 1926, Luther Burbank was considered one of the most important scientists at work in the United States. Ranked with the likes of Thomas Edison and Henry Ford, he was an innovator whose inventions were seen as improving the lives of all Americans. His specialty, though, was plants. Becoming famous for certain novelties – the spineless cactus, white blackberry, and stoneless plum, to name three – Burbank capitalized on his status as a celebrity botanist to weigh in on crucial issues of the day. A stout believer in the theory of evolution, he claimed to be harnessing the power of evolution to improve the lot of humanity through his plant innovations. He championed the ideas of Eugenics, arguing that the future of humanity depended on the careful selection of traits and the improvement of the environment in order to produce the right kinds of children to advance the human race. He was also a religious eclectic, embracing ideas like mental telepathy and claiming to have the power to heal, while also declaring himself an “infidel” like Christ, a declaration that brought him into such disrepute that it appears to have hastened his death. However, his speeches, writings, and popular articles gave celebrity support to all of these ideas and were a significant way in how Americans of the early twentieth century thought through these contentious issues.

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The Happiest Day: An Introduction

In October 1915, some of America's best-known men disembarked from a private train car in the sleepy town of Santa Rosa, California. The owner of the rail car was a wealthy industrialist; among his traveling companions was another industrialist in a related industry, while a second companion was a world-renowned scientist and inventor. They were all in California for the Panama-California Exposition in San Diego (to celebrate the recent opening of the Panama Canal) but took a brief diversion into the northern countryside to meet a fourth member of America's pantheon of popular heroes – a local botanist who met them at the small train station in Santa Rosa. After greeting one another at the station, the botanist drove them out to see his farm and experimental gardens. On their way into town, crowds of people cheered them from alongside the roadway. Once in town, they were treated to a parade and a serenading choir of school children. For the visitors, this was not necessarily unusual; they were used to such treatment. What was unusual was this meeting itself; although the various individuals had corresponded with the botanist for years, this was the first time they had ever met in person. After the festivities in town, they rode over to the botanist's house before heading out to his experimental gardens where they enjoyed his various novelties like the spinless cacti. As the evening sun went down, the visitors reboarded the train to head back to San Diego. The famous inventor was heard to say, "Goodbye . . . . This has been the happiest day of my life."[1]

[1] Ken Kraft and Pat Kraft, *Luther Burbank: The Wizard and the Man* (New York: Meredith Press, 1967), 8.

That famous inventor was Thomas Edison, frequently referred to in the press as “The Wizard of Menlo Park” or “The Wizard of the East.” His industrialist friend who owned the railcar was none other than Henry Ford. The other industrialist was Harvey Firestone. In many ways, these three figures with their yet-unnamed host represented, for many Americans, the pinnacle of ingenuity and scientific improvements. The thousands of people who gathered just for the chance to see and wave at these leaders was a testament to their fame and cultural importance.

Their botanist host was Luther Burbank, whom newspaper articles had been calling the “Wizard of the West” since at least 1899.[2] This meeting was no accident, but was a carefully orchestrated event to publicize the Exposition by capitalizing on the fame of these men. The editor of the *San Francisco Examiner* wrote to Burbank to ensure that Burbank would be present to meet with Edison and Ford – and offered to pay for all of Burbank’s expenses to make sure the meeting happened.[3] Firestone would write to his wife that Burbank was “the only man in this world who ever made botany as exciting as a horse race . . . . He was the one and only horticulturist the world had ever known whose name millions of ordinary people all over the world recognized.”[4] While one newspaper article gave all the details of the visit, it also reported on Ford taking the opportunity to market his

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[2] “An Inventor of Fruits: Luther Burbank is as Much of a Wizard as Edison,” *The Milwaukee Sentinel*, (26 March 1899).
[3] Justin McGrath, San Francisco, California, to Luther Burbank, Santa Rosa, California, 11 October 1915, TLS, Luther Burbank Papers, Manuscript Division, Library of Congress, Washington, D.C. Hereafter cited as LBP-LOC.
[4] Kraft and Kraft, *Burbank*, 4.

upcoming tractor to the crowds of farmers present,[5] a classic example of Ford wasting no opportunity to publicize and promote his work.

As the United States continued to grow economically, many Americans also took an increasing interest in scientific affairs. They took national pride in men like these four – men that had won even international acclaim for their achievements. By the 1920s, after forty prosperous years of business and fame, people throughout the world recognized Burbank's name and connected him to his impressive work within the plant realm. Newspapers articles praised and admired Burbank for his work developing numerous "products" that sometimes made him famous for humorous reasons: creating a "white" blackberry and a stone-less plum. He was also celebrated for ambitious plans, some of which never quite came to fruition; for example, he had developed a thorn-less cactus which he hoped to plant across the American Southwest, turning the mostly barren wastelands into fertile grazing lands for cattle. Despite his best efforts, this idea never panned out.

Despite the failure of this grand plan, his celebrity status gave him cultural currency, and newspaper reporters (among others) always seemed to know that Burbank would be good for a quote. Over the course of his career, he received numerous requests for essays, thoughts, or comments on a wide range of topics, and by the 1920s many of these had no connection to the plant world or even to science. Two examples can serve to illustrate this point. One journalist was collecting the earliest memories of a hundred famous Americans and wanted

[5] "EDISON IS GUEST OF PLANT WIZARD," *San Francisco Chronicle*, (23 October 1915), 4.

Burbank's earliest memory to be a part.[6] Burbank was happy enough to provide his first two memories. His mother carried him out to pick wild strawberries and set him down on a rock while she worked. A large crow landed next to him and began pecking at his toes until his mother heard his cries and returned to scare the crow away. The second memory involved a bit of childhood obstinacy; Burbank had thrown one of his toys under the bed, and no amount of cajoling or yelling from both parents could persuade him to retrieve the toy. When both parents were "thoroughly subdued," Burbank crawled under the bed of his own accord and rescued the toy.[7]

Another journalist, just a few days later, would ask Burbank to participate in her soon-to-be published project on "How My Wife Has Helped Me."[8] Burbank's reply is worth quoting in full, as it shows the humor and sentimentalism that was often present in Burbank's writing and speeches.

> One of the most important discoveries was that it was "not good for man to live alone", and according to our most reliable information, the early methods of capture of a bride were quite different from the present. Fleetness of foot and strength of arm then aided the capture, after which the club was freely used in making the captive a thankful and more or less submissive servant.
> How has my wife helped me? Words are futile in dealing with the vital things of the heart and life. They are a poor medium to express what you have asked for it would take many pages to getting to tell you in how many ways she has helped me and to begin to catalogue them would be like the construction of a dictionary. She has been an ever present helper on the numerous books which I have published and with constant encouragement, in ambitions, love, happiness, friendship; and both in public and in private with inspiration has made Life happy and complete; in other words, turned a desert into a home

[6] Ruth K. W. Thompson, New York City, New York, to Luther Burbank, Santa Rosa, California, TLS, 25 July 1922, LBP-LOC.
[7] Luther Burbank, Santa Rosa, California, to Ruth K. W. Thompson, New York City, New York, TLS, 1 August 1922, LBP-LOC.
[8] Betty Brainerd, New York City, New York, to Luther Burbank, Santa Rosa, California, TLS, 5 August 1922, LBP-LOC.

> of happiness and contentment. She is my friend, companion, pal, and helper; my philosopher, adviser, stabilizer, confidant, counseler [sic] and happy running mate. All these have been mine only since I reached the age of sixty-seven, when she placed her hand and heart in my keeping. May she never regret it.[9]

Both of these examples provide insight into the growing culture of celebrity in the United States, as anyone of national – or international – interest could expect to receive many similar requests every month.[10] By the 1920s Burbank had a solid reputation among the journalists of America as someone willing to answer almost any question at almost any time, and could usually be relied upon to provide an interesting and entertaining quote as well.

In his time, Burbank was just as famous to Americans as the others who visited him on that October day. Not too long before this visit, *America Magazine* held a write-in campaign in 1914 among their readers for the greatest American. After compiling the results, Luther Burbank was tied for seventh with Booker T. Washington and Senator Robert La Follette. Ahead of him were Theodore Roosevelt, Thomas Edison, Woodrow Wilson, "Mr. Ordinary Citizen," William Jennings Bryan, and Henry Ford. Just after him were Andrew Carnegie and Billy Sunday.[11] In similar fashion eight years later, the *New York Times* asked twenty-four different people to compile a list of the "Twelve Greatest American Men." Most of those making the list were locals with some connection to New York society or politics. While Burbank did not make the final composite list, he was named on

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[9] Luther Burbank, Santa Rosa, California, to Betty Brainerd, New York City, New York,, TLS, undated, LBP-LOC.
[10] Another example of this are the many tributes that Burbank was asked to pen, including for such luminaries as Booker T. Washington, Harvey Kellogg, Thomas Edison, and Woodrow Wilson.
[11] "The Greatest Man in the United States," *American Magazine*, 78 (October 1914): 63.

seven of those lists – including the list that Thomas Edison contributed.[12] At a time when traditional centers of cultural authority, such as the ministry, seemed to be dwindling, scientists and inventors like Edison and Burbank offered a powerful and impressive alternative. It was not enough that they were seen as a master of their own field; this mastery led the public to seek their opinions about anything of cultural and popular importance.

By his death in 1926, however, Burbank had gone from being a beloved cultural icon to a figure of great controversy and, unlike Ford and Edison, the name of Burbank remains largely ignored now. The reasons for this obscurity have something to do with the controversial issues that Burbank was involved with during his career, and the way Americans analyzed and responded to those issues. They also have something do with the way the word "scientist" came to be defined in a way that did not include Burbank and his work. In the early decades of the twentieth century, Americans debated the role of science in society, the meaning of evolutionary ideas, what kinds of eugenic practices were necessary to improve the country, and traditional ideas of Christianity, religion in general, and other mystical beliefs. Historiography on any of these issues has essentially banished Burbank and his ideas from their pages, relegating him to a single reference on a page, a mention in a footnote, or complete silence. Burbank was a key figure in these cultural debates, though, and this thesis will attempt to return him to the center of these stories.[13]

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[12] "Twelve Greatest American Men," *New York Times*, 23 July 1922, p. 84.

[13] For a single reference, see as George E. Webb, *The Evolution Controversy in America* (Lexington: University of Kentucky Press, 1994); Daniel J. Kevles, *In the Name of Eugenics: Genetics and the Uses of Human Heredity* (Berkeley: University of California Press, 1985). For a footnote reference, see Ronald L.

Not all recent historiography is quiet in regard to Burbank – at least one appears to be openly hostile to him and his work. Pauly has argued that "the populist folklore that emphasizes individual untutored American plantsmen (whether Johnny Appleseed or Luther Burbank) is seriously misleading regarding both tradition and technology."[14] The use of the word "untutored" is interesting; if it is implying the lack of a professional, university education, that is correct – Burbank did not attend college to study any subject, much less botany. But Burbank had read some of Darwin's works, and studied the methods of various plant breeders, and perfected many of his own; surely this is something better than "untutored."

Pauly's work does lay out a very helpful and informative transition of horticulture in the United States from what he calls horticulture proper to an emphasis on gardening in the early to mid-twentieth century. He sees four parts to American Horticulture: discovering and importing new varieties into the United States from around the world, figuring out how to get those new varieties to survive in the US, discovering if anything native to the US had hidden benefits not immediately realized; and getting rid of unwanted plants and pests.[15] In all four of these areas Burbank would play a leading role. Not only was he famous for the importation and propagation of a vibrant Japanese plum,[16] but friends – and even

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Numbers, *Darwinism Comes to America* (Cambridge: Harvard University Press, 1998). For silence, see Peter J. Bowler, *Evolution: The History of an Idea* 3e (Berkeley: University of California Press, 2003); Diane B. Paul, *Controlling Human Heredity: 1865 to the Present* (Amherst: Humanity Books, 1995); Susan Jacoby, *Freethinkers: A History of American Secularism* (New York: Henry Holt and Company, LLC, 2004).

[14] Philip J. Pauly, *Fruits and Plains: The Horticultural Transformation of America* (Cambridge: Harvard University Press, 2007), 2; this is one of two references to Burbank in the book.

[15] Pauly, *Fruits and Plains*, 3-4.

[16] Pauly, *Fruits and Plains*, 126, the second and final reference to Burbank.

strangers – sent him seeds from all over the world. He worked relentlessly on crossing these new varieties with local plants, seeking for new versions that were faster growing, better tasting, and more pest and drought-resistant than existing plants.

The shift to gardening was helped along by the rise of seed catalog merchants like Conrad-Pyle, Stark Brothers and W. Atlee Burpee.[17] The varieties that Burbank produced after 1893 were not sold to the public, but to dealers like Burpee and Stark, specifically, who then propagated, marketed, and sold the seeds as products of Burbank. Once again, while not the only one doing this sort of work, Burbank was perhaps the most famous and his varieties usually sold very well for those seed dealers. This dismissal of Burbank to the outskirts of these stories is part of the motivation for this thesis; after extensively reading through the writings and works of Burbank located in the Library of Congress, returning his words and works to the conversation has relevance for helping us understand how Americans thought about these issues and cultural debates.

This work builds on the essay by Katherine Pandora published in 2001. Pandora explored the ways that science (and science writers) had dismissed Burbank from discussions because his beliefs did not end up matching the later scientific consensus. Her goal was similar – to use Burbank as a way to talk about "cultural debates on the place of science in American Life."[18] His life, experiences, work, and accomplishments made him a household name, but none of that matched with the characteristics or interests of the academic, professional

[17] Pauly, *Fruits and Plains*, 231.
[18] Katherine Pandora, "Knowledge Held in Common: Tales of Luther Burbank and Science in the American Vernacular," *Isis* 92 (September 2001), 487.

scientist, and Pandora argued that a deeper study of Burbank helps to explain how Americans viewed science and its place in American life. Burbank's exact position – scientist, or nature expert? – was something that required close definition.[19]

This work seeks to expand Pandora's work beyond recentering Burbank into the arguing about the definition of who is a scientist and who is not, and focus more on Burbank's public-facing activities, something hinted at throughout Pandora's work. Even some who disliked Burbank and wrote against him, like Donald Jones, who ran the Department of Genetics at a Connecticut agriculture station in the 1920s, credited Burbank with getting regular people interested in actual science.[20] A later scientist said of Burbank in 1938:

> When I explain to people that I am a geneticist, it means nothing to most of them outside of a very small scientific group. If I tell them I am a follower of Mendel, the group is only slightly increased. But if I explain to them that I am crossing plants such as Burbank did, their faces light up, and many of them begin to feel quite at home and in a position to talk intelligently about a world that they know very little concerning.[21]

This gets at the issue in a nutshell. Americans – and others around the world – felt that Burbank was a scientist that they could understand, relate to, and support. His work made sense, and so it makes sense that the public devoured Burbank's thoughts and ideas about a wide variety of topics.

In the past decade, more professional historians have begun to recognize that the public has a great interest in history. Thousands of people visit museums and historic sites as well as watch documentaries and television shows about historical events. They are in search of a "usable past," to provide inspiration,

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[19] Pandora, "Knowledge," 516.
[20] Pandora, "Knowledge," 486.
[21] Orland E. White to W. L. Howard, 21 Dec. 1938, quoted in Pandora, "Knowledge," 489.

guidance, or just entertainment.[22] In similar fashion, it seems to me, people were (and are) in search of a usable science, and Burbank seemed to do this better than anyone.

Others besides Burbank recognized this desire for usable science, as agricultural stations were being established around the country to help provide seeds, techniques, and scientific procedures to improve the farm products of rural Americans. In fact, many of these stations were perfect for the early study of genetics.[23] Such was the case with Albert Blakeslee, who struggled to find meaningful work after receiving his doctorate from Harvard in 1904. Eventually, he found a position helping to run an agricultural station in Connecticut that required a heavy teaching load but also emphasized the practical side of botanical work.[24] His popularity grew after writing a book, but he would face opposition and jealousy from others when he used his position to try to mail a copy of his work to every teacher in the state.[25] By this point in time Blakeslee had begun studying genetics (as a natural outgrowth of the practical work at the agricultural station), and would leave after only a few years to help run the genetics lab at the Carnegie Station for Experimental Evolution at Cold Spring Harbor, New York.[26] Burbank would claim to be doing similar work to this, just on a much larger scale.

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[22] See John Fea, *Why Study History?* (Grand Rapids: Baker Academic, 2013), 25-46; Anna Green and Kathleen Troup, *The Houses of History: A Critical Reader in History and Theory* 2e (Manchester: Manchester University Press, 2016), 342-351.
[23] Barbara A. Kimmelman, "Mr. Blakeslee Builds His Dream House: Agricultural Institutions, Genetics, and Careers 1900-1915," *Journal of the History of Biology* 39 (Summer 2006), 243.
[24] Kimmelman, "Mr. Blakeslee," 249.
[25] Kimmelman, "Mr. Blakeslee," 263-264.
[26] Kimmelman, "Mr. Blakeslee," 269.

A study of Luther Burbank can help us understand how Americans wrestled with certain debates in the early twentieth century, whether they be scientific issues like the theory of evolution or eugenics, or religious issues like the conflict between Modernist and Fundamentalist Christianity, or new ideas like mental telepathy. Burbank played an important role in communicating these emerging ideas and debates to the general public, and his popularity ensured that the people were aware of these ideas. Chapter One explores the early life and formation of Burbank, along with the creation of what could be called the Burbank Myth. His future career path was charted while a teenager after he became acquainted with Charles Darwin's evolutionary theories in the 1860s, and was enamored of the idea that plant evolution could be directed by human effort and ingenuity for the betterment of mankind.

To test this, he moved to California in 1876 and began his breeding and nursery program along (what he considered) scientific principles. His first few years were engaged in what could be considered normal nursery work – supplying local farmers and fruit growers with the plants that they wanted. In 1888 he sold off the standard part of his nursery business to focus more exclusively on his experimental and scientific work. Burbank saw his work as helping improve humanity through the application of evolutionary principles.[27] On the practical side, his products would now be sold to larger plant suppliers who would gain exclusive access to these new varieties. To market these varieties, he produced one of the first mail-order seed and plant catalogs, entitled "New Creations in Fruits and Flowers," first issued

[27] The title of his eight-volume books published in 1921 says it all: *How Plants are Trained to Work for Man*.

in 1893. By 1900 he was one of the most famous nurserymen in the world, and Chapter Two explores the process described above.

His achievements did not just lead to great personal fame for Burbank, as they also led to scientific recognition, as Chapter Three explores. The president of Stanford University (Dr. David Starr Jordan, a noted scientist who studied fish), invited him to become an official lecturer in plant evolution at the University in 1904, which Burbank did for a few years. Jordan also planted an "Evolution Garden" at Stanford with trees developed by Burbank. Two of the rediscoverers of Mendel's theories, Erich von Tschermak and Hugo de Vries, both visited Burbank and spent time discussing his theories with them (in 1909 and 1904, respectively). In 1905, Burbank was inducted into Sigma Xi, the national scientific honor society, and received the first installment of a grant from the Department of Experimental Evolution of the Carnegie Institute to help finance his evolutionary experiments and publish their results. As part of the grant the Institution sent another researcher, Dr. George Shull, to record and publish the scientific principles of Burbank's work. While the grant continued to be renewed through 1909, the relationship between Burbank and the trustees of the Institute became increasingly strained, which led to the cancellation of the grant in 1910. Dr. Shull made important contributions of his own in the botanical field, but his unfinished report on Burbank's work is a prime example of how Burbank was viewed by the more University-oriented scientists of the time.[28]

[28] Shull's unpublished report can be found in Bentley Glass, "The Strange Encounter of Luther Burbank and George Harrison Shull," *Proceedings of the American Philosophical Society* 124 (April 29, 1980): 133-153.

As part of his scientific work, Burbank began "de-evolving" certain plants, particularly maize, in an attempt to show what their original plant form had been like before human interference. After fifteen years of work, Burbank had what he considered to be dozens of steps in the evolution of maize which he put on display, and donated part of a second display to the Peabody Museum of Archaeology and Ethnology at Harvard University in 1918. This kind of work was a sideline to his work on plants, but Burbank saw it as further proof for evolution itself and the practical benefits that could be gained by putting evolutionary techniques into practice. As the debate over biological evolution grew, he was a popular defender of the teaching of evolution, writing for magazines and speaking in liberal churches in the surrounding towns of California.

In this respect, Burbank was one of many involved in the cultural debate over the ideas of evolution. Many concerned individuals on either side of the debate had never read Darwin himself, preferring instead to focus on Darwin's ideas as distilled by other intellectuals like Asa Gray or Herbert Spencer. Burbank himself admitted that he had never actually read Darwin's *Origin of the Species*, although he thought he could write it based on his own knowledge of plants.[29] The ideological concepts unleashed by Darwin took time to gain acceptance in the United States, as described by numerous historians.[30] Burbank's claim to use the

[29] Champe S. Andrews, "Luther Burbank: The Man and His Mind; A Talk with One of the Greatest Living Americans in His California Home," *New York Times*, 5 August 1906.

[30] See, for example, Peter J. Bowler, *The Eclipse of Darwinism* (Baltimore: The Johns Hopkins University Press, 1983); Peter J. Bowler and Iwan Rhys Morus, *Making Modern Science* (Chicago: University of Chicago Press, 2005); Frederick Gregory, "The Impact of Darwinian Evolution on Protestant Theology in the Nineteenth Century." In *God and Nature: Historical Essays on the Encounter Between Christianity and Science*, ed. David Lindberg and Ronald Numbers

power of evolution to produce new varieties of plants to aid humanity was one way that Americans grew more comfortable with evolutionary thought.

Historians have also traced how evolution ideas mutated to become a cluster of theories known as "Social Darwinism" and came to influence many fields of study, as well as among a general, popular audience.[31] Burbank was one of the important cultural figures to whom Americans looked for guidance as to what exactly evolution might mean, and he was a pivotal figure in the cultural debates that culminated in the renowned Scopes Trial of 1925. As a way to bolster their arguments during the trial, Scopes' defense team, used Burbank's public support of the teaching of evolution and included a testimonial letter from Burbank as a "witness" during the trial.[32] Religious conservatives were initially hostile after Darwin's theories were first published in the United States, but many found ways to adapt evolution to conservative religious views. But evolutionary theories continued to develop in complexity (including the idea of human evolution from "lesser" organisms), at the same time as religious Fundamentalists rejected Modernist interpretations of scripture that made the adaptation of evolutionary ideas possible. As these positions hardened after the trial's conclusion, Burbank's decline in fame

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(Berkeley: University of California Press, 1986); David N. Livingstone, *Darwin's Forgotten Defenders* (Grand Rapids: W. B. Eerdman's, 1987); and Ronald L. Numbers, *Darwinism Comes to America* (Cambridge: Harvard University Press, 1998).

[31] See, for example, R. C. Bannister, *Social Darwinism: Science and Myth in Anglo-American Social Thought* (Philadelphia: Temple University Press, 1979); Carl N. Deglar, *In Search of Human Nature: The Decline and Revival of Darwinism in American Social Thought* (New York: Oxford University Press, 1991); and Richard Hofstadter, *Social Darwinism in American Thought* (New York: George Braziller, INC., 1965).

[32] Edward J. Larson, *Summer of the Gods: The Scopes Trial and America's Continuing Debate Over Science and Religion* (New York: Basic Books, 1997), 134-135.

helps to show that beliefs about evolution mattered more in the 1920s and 1930s than they did in the 1890s and 1900s.

Evolution was not the only contentious idea that Burbank was involved with – he also was a strong supporter of eugenics programs, as Chapter Four discusses. This was a time when many organizations became involved in promoting eugenic ideas and ideals, such as the American Breeders' Association.[33] An early leader of the ABA, Willet Hays, had worked at a Minnesota agricultural experiment station from 1897-1904 and wanted the ABA to broaden their base of membership by publishing a magazine for popular consumption, but this created conflicts "between the scientific and commercial concerns"[34] of the ABA members – similar to the conflicts that would result from Burbank's work. The popular magazine was eventually created, and under Hays' guidance the ABA would create a special committee on eugenics in 1907 that included Burbank and his Stanford supporter Jordan as members. The committee eventually became a special "Section" of the ABA, and frequently recommended articles for the popular magazine to publish, firmly connecting the ABA to eugenic ideas.[35]

Burbank demonstrated his interest in the eugenics movement in 1907 with the publication of his book *The Training of the Human Plant*.[36] While Burbank proposed a radical modification of the education system in the United States in *Human Plant*, he also argued that certain humans were unfit to breed. As one

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[33] Barbara A. Kimmelman discusses how the ABA came to embrace and endorse the eugenics movement in her article "The American Breeders' Association: Genetics and Eugenics in an Agricultural Context, 1903-13," *Social Studies of Science* 13 (May 1983): 163-204.
[34] Kimmelman, "Breeders' Association," 181.
[35] Kimmelman, "Breeders' Association," 184-185.
[36] First published as a long article in *Century* 72 (May 1906): 127-138.

might expect, he came to this decision from his examination of nature. Just as weak, sickly, and dangerous plants should not be allowed to reproduce and spread their weaknesses on to other generations, so too should weak, sickly, and dangerous human beings not be allowed to reproduce. By the 1920s Burbank spoke on numerous occasions in support of the Eugenics society and their program of reform, and became an official member of that society in 1923. In a speech in 1922, Burbank argued that all attempts to help with people's environments could only do so much; at most, it could help a person live up to their potential. But plenty of food, water, and sunshine could never make a "bad" plant into a "good" one, and no improvement of environment could transform a "bad" person into a "good" one. He was a popular enough defender of eugenics that the playwright Percy MacKaye's eugenics-themed play, "Tomorrow," featured a gardening protagonist in Northern California based on Burbank. Up to his death, Burbank remained a firm believer in the need to protect society from its so-called lesser elements through the process of selective, healthy breeding.

One thing that makes Burbank different, at least in comparison to many others in the eugenics movement, is the fact that in *Human Plant* he did not appear to consider racial distinctions or racial mixing as a barrier to healthy breeding. In fact, he argues that America, like no other nation on earth, afforded the chance to create a superior race through the mingling of the many immigrant groups with the "native" stock.[37] It would appear, though, that Burbank lost some of this racial

[37] Luther Burbank, *The Training of the Human Plant* (New York: The Century Co., 1907), 4-10.

optimism over time as he came more under the influence of other popular eugenic proponents.

Historians have shown that support of various kinds of eugenic programs was acceptable to Americans before the Second World War. But, once again, Burbank remains invisible from these works. And yet Burbank received much national recognition for the publication of *Human Plant*, and it continued to be mentioned as one of his key contributions throughout the rest of his life. While the majority of *Human Plant* was about education reform, it all tied together into the vision Burbank had for human society. Proper environment mattered for humans just as much as it mattered for plants, he argued. So too did genes, but there was only so much one could do about that. The best thing that society could do was to find ways to keep the unfit from breeding, and thereby hinder the unfit from polluting future generations with their impure stock. Burbank's opinions matched many others at this time, as many states passed some kind of legislation designed to deal with the problem of unfit reproduction – including involuntary sterilization. Burbank's expertise in the plant world appeared to give his work and ideas an added authority that others lacked – he argued that his experiments revealed that a good plant could become greater when it was properly bred and trained, and if this could be done with plants, it could be done with humans as well.

While the issue of eugenics may seem more controversial in today's society, Chapter Five will demonstrate that it was his religious views that seemed to outrage some of Burbank's contemporaries the most, and a study of Burbank is a useful way to examine some of the religious issues that Americans were addressing in the early 20th century. In the same interview in which he admitted

that he had not yet read *Origin of Species* (but could have written it), he claimed to have been a “materialist” (and by this he meant the belief that there was nothing spiritual about life) in the past, but was now a believer in some kind of “dynamic and static forces” that governed all life, and gave matter its form.[38] He had written a paper about it and passed it along to Dr. Jordan during one of his visits to Burbank’s gardens. Like some of his contemporaries Burbank displayed a penchant for mysticism, such as his admission that he shared a telepathic link – what was called at the time “mental radio” – with his sister, Emma, in a magazine story in 1922. He claimed to have the ability to heal the sick, a spiritual gift received from his mother’s side of the family. He also claimed to be able to communicate, in some way, with plants and animals, especially his dog.

But Burbank was also known for his open rejection of many traditional Christian beliefs, especially the idea of Hell, and declared himself to be a religious "infidel" – just as Jesus was an infidel before him. His religious heterodoxy had not seemed to matter much before – although the title of his plant catalog, *New Creations*, cause a bit of a stir when first introduced. However, in the post-Scopes world tensions between modernist and fundamentalist Christian forces were high. The outrage produced by his declaration that he was a religious infidel in the newspaper interview in early January, 1926, was not calmed by a sermon at a San Francisco church where he professed his love of humanity and his admiration for Jesus, the Man, but not the divine Christ proclaimed by the Church. Hounded by

[38] Champe S. Andrews, “Luther Burbank: The Man and His Mind; A Talk with One of the Greatest Living Americans in His California Home,” *New York Times*, 5 August 1906.

reporters and swamped by mail, the increased stress that came from this notoriety probably led to a stroke in March, and then his death in April.

In the early twentieth century arguments between modernists and fundamentalists fractured denominations, and adherents of non-Christian religions led some to question Christianity's claims. For example, Paramhansa Yogananda arrived in the United States in 1920, and established a Hindu institute in Los Angeles in 1925 after delivering speeches around the country. Yogananda published a famous autobiography in 1946 that was "Dedicated to the Memory of LUTHER BURBANK an American Saint."[39] Earlier in Burbank's career, Americans from many different Christian traditions found ways to embrace Burbank and his work as a sign of either liberal progress or God's power – although there were some who were afraid that, by messing with the fabric of nature itself, Burbank might unleash one of the plagues Scripture promised would fall on people during the last days. As the religious debates increased in American society, so too did the debates over the meaning of Burbank's work.

So how and why did Burbank slip into relative obscurity? How did a renowned figure, celebrated for his achievements and toasted as one of America's greatest men, become, at best, a footnote in historical accounts of this time? In many ways, he ended up on the "wrong" side of these cultural debates, with few champions left to keep his memory alive. There is also the challenge of his larger-than-life reputation. Often he was accused of allowing supporters to exaggerate his achievements, or of blowing them out of proportion all by himself. It is sometimes

[39] Paramhansa Yogananda, *Autobiography of a Yogi*, 7th ed. (Los Angeles: Self-Realization Publishers, 1956), iii.

difficult to determine what is factual and what is fiction in regard to some of his accomplishments. For example, the quote from Edison at the end of his visit in 1915 about this being the “happiest day of his life” appears in many writings about Burbank, but no contemporary references to this quote have been found. But it is also true that few challenged Burbank to his face; some came away from personal visits with a newfound respect for him and his accomplishments.

While some scientists had criticized him as early as the 1900s, it was only in the 1910s after the falling out with the Carnegie Institute that criticisms from the scientific community began to gain ground against Burbank. His record keeping was shoddy, and while he conducted thousands of experiments every year (although many scientists would debate whether they were actually experiments), most of those experiments were destroyed before full completion, leaving little to nothing for others to study. He had no university training and seemed to show disdain for the ones who did, considering himself a "practical scientist" as opposed to the "theoretical scientists" who simply worked out of a lab or in a university setting. For example, some botanists at Harvard challenged his de-evolution of maize displays at the Peabody Museum. Burbank told them to work for fifteen years on it themselves and then get back to him. Burbank’s widespread fame and praise in the press made it seem as if he were claiming greater successes than were possible, and some of his plant products were later found to be identical to others already introduced into the market, although whether this was accidental or intentional is difficult to determine.

Burbank also remained fairly ignorant of developments in both evolutionary theory and genetic studies, and his antiquated views of both of these placed him

squarely at odds with the new science. For example, Burbank remained committed to Lamarckian evolution, a theory that in the post-Darwinian world would become increasingly and universally discredited by biologists. While the scientific community's criticism of Burbank may have been at least partly out of jealousy for his fame and popularity, there were many valid reasons for criticisms of his work and experiments. By the 1940s he was no longer considered a scientist, much less a botanist, but a "master gardener" at best.[40]

Burbank also lost a great deal of support among average Americans after the mid to late 1920s. The teaching of evolution had become a litmus test of sorts among religious fundamentalists, and Burbank's continued propagation of evolutionary ideas, combined with his admission that he was a religious infidel, resulted in the erosion of his acceptance among many conservative Americans. It did not help that support for eugenics programs fell into disrepute after World War II and the atrocities committed by the Nazis, and Burbank had been a staunch and vocal supporter of state and federal eugenic programs throughout his life. Religious and social liberals would also not be interested in his acceptance of telepathy and claims to healing power.

A close examination of Burbank's life and thought is useful to the historian for many reasons. First of all, Burbank helps us to understand how Americans assimilated and processed Darwinian ideas. His strong approval of evolutionary ideas, combined with his general popularity, puts into sharper focus the complex

[40] Walther L. Howard, "Luther Burbank: A Victim of Hero Worship," *Chronica Botanica* vol 9, 1945, 301ff.

debates that took place in America for decades, a debate in which Burbank – and the interpretation of his work – played a primary role.

Second, this study will expand in very useful ways the growing consensus on the ubiquitous nature of eugenic ideas in early twentieth-century America. However, Burbank's early thought may show a different thread of eugenic thought, one that avoided the racial overtones of other eugenicists in favor of a more "nature-based" eugenics program.[41]

Third, this study will contribute to our understanding of the complex religious debates of the age and just how and where the lines were drawn between what was deemed culturally acceptable and what was not. Many historians have focused on the debates between liberal and conservative Christians, but a study of Burbank includes more than just that debate. His mystical, naturalistic leanings provide another important glimpse into the turbulent religious times at the turn of the century.

Fourth, Burbank is also the perfect test case to show the increasing professionalization of the scientific community. The rise of American universities paralleled this development, and while scientists and university leaders accepted Burbank at the beginning of his career, he became increasingly estranged from them as the twentieth century progressed and scientific circles adopted universal academic standards from European universities (particularly Germany). Burbank's

[41] It must still be said that any eugenic program carries with it questions of judgment and discrimination, as some people are determined to be "unfit," even if race is not the deciding characteristic. Who might make those decisions and define the "unfit" are always problematic.

methods and record-keeping did not meet these standards, and so he could no longer be considered a true scientist.

Burbank's work also shows the tensions between "practical" and "theoretical" scientists that were developing, although it seems that the practical side of agricultural developments has been understudied by historians. There is also some difficulty, especially in regard to agriculture, in separating the practical from the theoretical. The difference, in some respects, may be due to the size of Burbank's operations. Burbank worked with thousands of different kinds of flowers, fruits, nuts, succulents, and grains. George Shull, thoroughly grounded in botany and competent to examine Burbank's work in these different areas, chose to focus his own work primarily on corn. Burbank would have considered Shull a theoretical botanist, as opposed to his own practical botany. Shull, however, and others like him, were concerned about the more commercially-driven elements of Burbank's diverse activity, seeing it as more connected to market forces than to true science.

Additionally, there may also be a conflict between eastern and western American universities. It could be that Western scientists like Dr. Jordan at Stanford and Edward Wickson at the University of California, Berkeley, supported their local hero over against the older, more established personalities in the east. Once again, Burbank is a fitting personality to use to examine the complexities of this pattern of organization and professionalization in the sciences.[42]

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[42] For the scientific aspects, see, for example, Garland E. Allen, *Life Science in the Twentieth Century* (New York: John Wiley & Sons, Inc., 1975); William Coleman, *Biology in the Nineteenth Century* (New York: John Wiley and Sons, Inc., 1971); Robert Olby, *Origins of Mendelism* (Chicago: University of Chicago Press, 1985); Katherine Pandora, "Knowledge Held in Common," *Isis* 92 (3); Philip. J. Pauly, "Modernist Practice in American Biology." In *Modernist Impulses in the Human Sciences 1870-1930*, ed. Dorothy Ross (Baltimore: The Johns Hopkins University

Finally, a study of Burbank's career will help us to better understand how Americans selected and "consumed" celebrities. He received numerous requests for autographs and pictures from admirers, including some from different elementary schools throughout the country. The local Santa Rosa newspaper reported in 1918 he received, on average, 300 letters a day to which Burbank was able to respond (they did not count letters that Burbank could not or would not respond to).[43] The new technology of motion pictures recorded many of his key moments, including the all-important visit from Ford and Edison, and Burbank joined the National Educational Motion Picture Association in 1915 to help incorporate the new medium into the education of children. Radio broadcasts were held at his home, including some that continued after his death (Mrs. Elizabeth Burbank had a regular, 15-minute local radio show entitled "Garden Walks" in the 1930s and played host for a local NBC radio station's Christmas broadcasts in 1947 and 1948). Burbank's lists of his correspondents, visitors to his gardens, and organizations to which he belonged, makes it clear that as a celebrity scientist like Thomas Edison he was a figure of importance to this age.[44]

The easier question to answer, it seems, is why he slipped into obscurity. The harder question is why had he risen to prominence in the first place? Why Burbank and not someone else? The answer may lie in the fact that Burbank helped create an ethos in America where people expected science to make their

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Press, 1994); and Margaret W. Rossiter, *The Emergence of Agricultural Science* (New Haven: Yale University Press, 1975).

[43] *Santa Rosa Democrat*, article from February 26, 1918, in the Burbank scrapbooks in the LOC.

[44] For the cultivation of celebrity among scientists see, for example, Marcel LaFollette, *Making Science Our Own* (Chicago: University of Chicago Press,1990); Wyn Wachhorst, *Thomas Alva Edison* (Cambridge: The MIT Press, 1981).

lives better, and in this way he was instrumental in the rise and triumph of science in the twentieth century. Many of his contemporaries felt sure there was nothing that Burbank could not do; and why would they not think this, coming from the man who created the pit-less plum, the spine-less cactus, and the white blackberry? He himself claimed, on numerous occasions, that almost anything could be accomplished given enough time, energy, and healthy plants through the power of Nature's own evolutionary principles. Progressives worked to correct the ills of society, and Christian liberals looked forward to a glorious spiritual millennium of peace and harmony on earth, and Burbank offered hope to both.

An important aspect of Burbank's legacy came to prominence only after his death. Throughout Burbank's entire career he was forced to operate in a system in which there were no legal protections for his plant products. Biological or botanical "inventions" had no protections under the law, and no patents were granted for any living product. This meant that anyone who could figure out how Burbank produced a flower or fruit tree could produce their own product without fear of legal repercussions ~~(~~and this may explain, at least in part, why Burbank was so reluctant to keep detailed notes or to publish his work methods the way scientists wanted~~)~~. The nursery business was a cutthroat one, with a slim margin for error, and while Burbank never seemed to struggle financially once his business was started, it may have been because he kept silent about how he was going about creating these products. Throughout his life Burbank lobbied for a patent law to be passed, to no avail. It was not until the 1930s that the U.S. Congress passed an applicable patent law for living products (thanks in part to Thomas Edison working openly on behalf of Burbank's memory). Some of the first patents were granted posthumously to

some of Burbank's most important - and famous - creations. It is hard to imagine that the current agri-corporations that drive so much innovation and change in the twenty-first century could exist without such a patent law in place.

Chapter 1: Burbank was Created

Towards the end of his life, Luther Burbank recounted in his autobiography a formative moment from his childhood. One winter, near the age of ten, he journeyed through the woods near his home and marched over the snowy and icy terrain. In his later retelling of the story, Burbank imagined that he was grumpy and "tired of winter . . . maybe kicking up the snow and calling it names, perhaps punished for my petulance by stubbing my rebellious toe against a hard-hearted old New England rock."[45] At some point on his journey home, Burbank stumbled upon a horticultural marvel: one area of the forest was still green, kept warm by the waters of a natural hot spring. Still-growing plants filled the winter oasis, and little flowers bloomed. Stunned, Burbank wondered why these plants were able to struggle against their natural tendencies to lie dormant (or die) in winter. They "should have known better, the way they had been raised and with their decent seven-months-of-summer ancestry behind them, to flaunt themselves so shamelessly in this unfilial winter blooming!"[46] While this observation is obviously couched in the language of the older Burbank, he attributed this discovery to the early formation of one of his dearest principles: that environment played a powerful role in the nature and character of plants. He walked the rest of the way home in awe, and excitedly told his family what he had seen. If anyone of Burbank's family had discovered the hot spring before, they had not revealed it to him; and, they seemed little interested in it when he informed them of his discovery.[47] The

[45] Luther Burbank and Wilbur Hall, *The Harvest of the Years* (Boston: Houghton Mifflin, 1927), 5.
[46] Burbank and Hall, *Harvest*, 6.
[47] Burbank and Hall, *Harvest*, 6.

memory, though, stayed with Burbank, and versions of this story were used frequently to explain his interest in plants and his willingness to experiment upon them as being a quality of his throughout his whole life.

One family member who did encourage this kind of enthusiastic examination of nature was Burbank's much older cousin, Levi Sumner Burbank. Levi was a professor; he had taught at a small college in Paducah, Kentucky, until the outbreak of the Civil War. He then returned to Massachusetts, teaching at an institute there until his death in the 1880s. Burbank described Levi as someone who had “a remarkable power of exposition and explanation . . . and had read more books and understood them better than any one else I knew. . . . He was interested in Nature and her processes and he knew enough of such laws and speculations as men had then formulated to open many doors for an avid boy.”[48] Levi was friends with Louis Agassiz, the famous scientist and Harvard professor who would play a key role in the upcoming debate about evolution. Levi was a geologist at the Boston Society of Natural History (founded in 1830); and was an early member of the American Association for the Advancement of Science (founded in 1848).[49] With some other specialists, he edited the first half of a scientific textbook that was used throughout New England.[50] As the sectional troubles increased in the years leading up to the American Civil War, Levi moved out of Kentucky and came to live at the Burbank home. The years Levi spent there

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[48] Burbank and Hall, *Harvest*, 7.
[49] Luther Burbank, *How Plants are Trained to Work for Man*, vol. VIII (New York: P. F. Collier & Son Company, 1921), 187-188.
[50] William G. Peck, Levi S. Burbank, and James I. Hanson, *Introductory Course of Natural Philosophy: for the use of High Schools and Academics. Edited from Ganot's Popular Physics*, rev. edition (New York: American Book Company, 1888).

impressed upon young Burbank a love of nature, and left an indelible mark on Burbank's intellectual development.[51]

These carefully curated memories reveal much about Burbank and the image he carefully inculcated throughout his career. They show him to be a man who cultivated a public persona and, in many ways, a particular lifestyle designed to be the embodiment of the American ideal of the "self-made man." Since colonial times, Americans (particularly Protestant ones) had outlined characteristics that led to success; traits like "industry, frugality, honesty, and piety" could be developed and bring success to all who practiced them.[52] One historian summarized the ideas of Benjamin Franklin, in his *Memoirs*, as stating that improvement would come with "the industrious pursuit of a profession, the cultivation of the moral and intellectual virtues, and the assumption of a responsible role in the general progress of society."[53] Later, Ralph Waldo Emerson's philosophy of self-reliance and success would be added to this cultural ideal. In his essay "Success," Emerson outlines the criteria by which one can determine who is a success:

> We know the answer that leaves nothing to ask. We know the Spirit by its victorious tone. The searching tests to apply to every new pretender are amount and quality, -- what does he add? and what is the state of mind he leaves me in? Your theory is unimportant; but what new stock you can add to humanity, or how high you can carry life? A man is a man only as he makes life and nature happier to us. I fear the popular notion of success stands in direct opposition in all points to the real and wholesome success. One adores public opinion; one fame, the other desert; one feats, the other humility; one lucre, the other love; one monopoly, and the other hospitality of mind.[54]

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[51] Burbank, *Plants are Trained*, 223.
[52] John G. Cawelti, *Apostles of the Self-Made Man* (Chicago: University of Chicago Press, 1965), 4-5.
[53] Cawelti, *Apostles*, 23.
[54] Ralph Waldo Emerson, "Success", *The Complete Works of Ralph Waldo Emerson*, vol. VII (Boston: Houghton Mifflin Company, 1912), 307-308.

So, by the mid-nineteenth century, many Americans defined the self-made man as one who worked hard, remained true to himself, helped society, may have wealth but was not obsessed with it, and who might have fame but remained humble.[55]

Burbank had been heavily influenced by these ideas of Emerson. Before setting off for California, he wrote a short paragraph on "Success" that he hoped would be published in a local newspaper or academic journal. It was not, but he saved it among his papers and it is a good example of how he inculcated the American ideals of success and the self-made man.

> What is success? It is the realization of what we hope and labor for. But, in trying to obtain success we should be honest with ourselves and the world; do nothing that gives us a pang of conscience. If you cannot do this, sink into the depths of failure unsoiled and unspotted. Every successful man, you may be sure, has had many things to discourage him in the course of his career; he has borne many rebuffs; he has sustained many failures. What if men do not understand you—are not inclined to encourage you—and exercise the privilege of age or superior position? Bear with it all patiently and your time will come. . . . [T]he world may laugh at your failure, <u>try again</u>, and perhaps it will be your turn to laugh. . . . [I]f you have the right stuff in you, you will not be put down.[56]

Here we see two of the virtues that Burbank would champion for his entire life and career. Hard work was crucial – which also included related traits like curiosity, perceptivity, and discernment. Industriousness would naturally lead to success, if combined with the second virtue – social position. Good heredity and environment, being a part of a solid family and surrounding oneself with excellent friends—having the "right stuff in you" ensured that "you will not be put down." Success was inevitable.

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[55] Cawelti, *Apostles*; discussion of Emerson's contributions on pages 85-98.
[56] Luther Burbank, January 1875, LBP-LOC. Emphasis in original.

These were some of Burbank's greatest strengths. Inevitably, he seemed to stumble upon the right plant at the right time, or made full use of his "Yankee instincts"[57] of hard work and diligence. While others may have either ignored a particular detail of a plant or other item, or may have completely failed to notice that particular detail, Burbank seemed to possess a unique skill of discernment, demonstrating it in some instances in ways that would amaze even an observer inclined to doubt him. For example, Burbank displayed an inventive or mechanical genius as a young man. Jennie Ball, an older sister of Burbank, told the story of their father purchasing a new mowing machine for the farm. Unfortunately, neither Samuel nor another man had any success in getting it to work. Just as they were about to give up, Burbank approached, pointed to a small part that seemed to be out of place, and said, “Don’t this go here?” When the piece was moved, the machine ran. He was asked “how he knew where the piece went. ‘Why,’ he says, ‘I see it <u>couldn’t</u> fit anywhere else.’”[58] Burbank’s family used such tales as this to emphasize the gifted nature of his intellect; he was able to see how things fit together, or how they could be made to work together, and was more advanced in this than those much older than himself. While going to the Lancaster Academy as a teenager, Burbank apparently spent a great deal of time tinkering with engines (especially steam-powered ones). One of them was sold to power a “pleasure boat.”[59] After this, he began working at his uncle’s factory. After being assigned to a particular machine producing bricks, he eventually developed a device that he

[57] Burbank and Hall, *Harvest*, 10.
[58] Jennie Ball, Massachusetts, to Emma Burbank Beeson, TL, 28 February 1903, LBP-LOC. Emphasis in original.
[59] Kraft and Kraft, *Burbank*, 21-22.

attached to his machine that increased its productivity, earning himself more money than was usual (as he worked by the piece and not by the hour). Everyone believed that Burbank had enough talent to succeed in an industrial vocation; but, while Burbank had mechanical skills, he hated the shop environment, and preferred to avoid the noise and bad air.[60] Instead, he would apply his Yankee ingenuity to the world outside, not trapped inside a stuffy factory shop. His discernment was not limited to the world of nature but was a part of his universal industriousness.

Burbank's social position was also a key part of his success, and both the concepts of "heredity" and "environment" played a role in this. Biographers and supporters always pointed out his favorable beginnings, supportive family members, and fortuitous connections. In many ways, Burbank's ancestors were of typical, New England stock. Samuel was "a New-Englander of pure and unmixed physical strain," but did not have the "shallow," or "austere" character of some of his neighbors. He was, instead, a "man of imagination and a facile mind," who "loved beauty and the sunshine and pleasantness of the land." Olive "was shrewd and practical," "with a great love of her garden," and "had an unusual bent for making things grow."[61] With Burbank's later interest in the inheritance of characteristics, he was essentially crediting his father with his imagination and his mother with his love - and skill - with plants, while still maintaining the useful image that he came from "pure" New England stock.

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[60] Burbank and Hall, *Harvest*, 8-9. Emma Burbank Beeson, *The Early Life and Letters of Luther Burbank* (San Francisco: Harr Wagner Publishing Company, 1927), 67.
[61] Burbank and Hall, *Harvest*, 2.

Burbank also praised the life and environment that surrounded one growing up in New England.

> Massachusetts was – and still is! – a good place in which to be born. I can remember now the keen sweetness of the air on sharp mornings, the sun on snow or on green carpets of grass on the rolling lands. . . . I can hear the scoldings and makings-up of birds, the sharp crack of ice on a pond in winter, or the croak of frogs in the odorous evenings in June. . . . New England has something all its own – an atmosphere of rugged beauty, of kindliness hidden behind a brusque manner . . . ; it is a country full of surprises and discoveries: lost ponds, unexpected vistas, hidden vales. . . . I do not think I was more sensitive to beauty than all the others, but perhaps I exclaimed about it more. It never failed me. And it never failed to excite and stimulate me.[62]

Here, the much later Burbank is reading his "natural" childhood through the lens of his later emphasis on the role of environment in shaping human characteristics. Much of these thoughts would also appear in his *Training of the Human Plant*, a book on the education of children (with an emphasis on eugenics) that would appear in 1905. Like many other Americans at the turn of the century, Burbank shared a nostalgic view of the power and importance of nature in shaping the individual American's consciousness.

It was not just Burbank in his autobiography and all of his later biographers who told these sorts of tales; Burbank's own relatives loved to tell stories that tied him to nature at a very early age. His older sister, Ball, was a frequent teller of childhood Burbank tales. She had been a babysitter of Burbank and later taught him when he went to school. She recounted how when Burbank "was a baby, and fretful with teething, he would be quiet, and forget his pain if we gave him a flower. He would look at it so curiously; and carefully lift the petals as if to see how it was

[62] Burbank and Hall, *Harvest*, 3-4.

made. Once a petal fell off from a wild rose that he was handling, and he picked it up and tried so hard to put it back, he looked so worried because it wouldn't stay in place - - I think he cried."[63] While the story seems plausible, it also seems too good to be true. The renowned originator of new varieties of plants, and one of the most famous men in America in the early 1900s, found comfort as an infant in the beauty of flowers? But Ball told other stories as well; when Burbank was around three, he saw someone pick a flower from their garden, pulling it up by the roots. Burbank managed to get the flower back but was seen by Olive (who then thought that Burbank had uprooted the plant himself). Though he got in trouble, he did not complain or try to set the record straight; instead, he simply replanted the flower in the ground as quickly as possible.[64] The family was convinced that Burbank "had something of this sense of kinship with plants when a tiny tot." At around the same age, he loved to watch the "Lady Delights," a sort of pansy, swaying in the morning breezes. Burbank thought they were all bowing and telling him good morning, but grew upset after Ball picked one flower for him to enjoy. Burbank wanted her to put the flower back, but the misguided act could not be undone. "You never wanted a flower broken off from its stem," she later told Burbank.[65]

All these stories were recorded by family members as Burbank was gaining in fame, but well before he reached the pinnacle of popularity. They all served the useful purpose of setting Burbank's love and skill with nature as something innate,

[63] Jennie Ball, Massachusetts, to Emma Burbank Beeson, TL, 28 February 1903, LBP-LOC. Emphasis in original.
[64] Jennie Ball, Massachusetts, to Emma Burbank Beeson, TL, 28 February 1903, LBP-LOC.
[65] Jennie Ball, Concord, Massachusetts, to Luther Burbank, Santa Rosa, California, LS, 29 December 1905, LBP-LOC.

as something not recently learned but present in Burbank from the beginning. Why else would an infant, during teething, find comfort in a flower? Stories such as these could only strengthen the mystique that was growing around Burbank and what he was capable of accomplishing.

The family took great pride in some of their cultural affectations, and another sister, Emma, made a point of emphasizing the family's social connections.

> The home was filled with intellectual activity, being near Concord, then the center of American literature, famous as the home of Ralph Waldo Emerson and other men and women whose thought was influencing the world. All the household was greatly interested in the great leaders of the times – Lincoln, Webster, Sumner, Agassiz, the Beechers, as well as Emerson, Thoreau, Longfellow, and the Alcotts, some of whom were personal acquaintances and sometimes guests at the home. Ministers, lecturers, and teachers were always welcome.[66]

This makes two important points. First, that the Burbanks were a respectable, well-educated, well-read family – no matter how much formal schooling any individual, like Luther, may or may not have received. This point was especially crucial later on, as the field of botany developed professionally. The new professional botanists would, increasingly, study plants in a university approved course of study, including not just undergraduate programs but, increasingly, graduate ones. Burbank would often feel the need to justify his knowledge when challenged by scientists centered in universities.

Second, as Burbank became better known among the American public, many of his more mystical ideas and religious beliefs would be chronicled by journalists and others. Some of these were controversial, even, perhaps, leading to his death. But this grounding of his upbringing to include the transcendental

[66] Beeson, *Early Life*, 41-42.

writings of these family friends helped emphasize that he was no more heretical or worthy of condemnation than Emerson or Thoreau.

It is important to understand this point because Burbank did not receive much formal schooling, especially in the higher grades. He began school at the usual age of five, and had an older brother Hosea and then his sister Ball as his first teachers. They found it difficult to convince Burbank to recite his lessons (a usual part of the pedagogy of the time) due to his shyness.[67] Ball tried every method she could, even to the point of being considered harsh, to no avail.[68] In 1864, Burbank entered the Lancaster Academy. For the next four years, he studied at least part-time at the five-year preparatory school which included courses in Math, Grammar, History, Latin, Geography, Philosophy, French, Accounting, Greek, Physiology, and Chemistry. The fifth and final year was considered the equivalent of the first year at Harvard University. There is no evidence that Burbank completed the fifth year; in fact, there is no way to be certain how much of the four years he did complete.[69] Once again, his lack of extensive formal education would often lead Burbank to justify his ideas as stemming from his practical education (completed in the fields and experiments) that the more professional (defined as university educated) scientists lacked. It is fair to say, though, based on his later writings, that Burbank absorbed at least a rudimentary understanding of these subjects from his time at the academy, as his interests often ranged over many of these topics. However, the limited nature of his formal

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[67] Beeson, *Early Life*, 66.
[68] Jennie Ball, Massachusetts, to Emma Burbank Beeson, TL, 28 February 1903, LBP-LOC.
[69] Records saved by the family are sparse for his years at the Academy as held in the LBP-LOC.

education had to have been a distressing thought for Burbank, and perhaps the guilt or feelings of inadequacy help to explain the contours of some of his later arguments with scientists of more academic backgrounds.

There is a third component to the American ideal of success, however—the character trait of piety. While Burbank would not have defined himself as a traditional Christian towards the end of his life, he did have what many at the time would have considered a normal religious upbringing. Burbank's paternal grandfather, Nathaniel, married a widow named Ruth and bought a small farm near Lancaster, Massachusetts, in 1707 and operated a brick and pottery factory on the site until his death in 1818.[70] His paternal grandparents originally attended the Unitarian church in Lancaster. At some point, though, Ruth decided that she would attend a new Baptist church with the children (including Burbank's father, Samuel) in the opposite direction from Lancaster. Nathaniel continued to attend the Unitarian church - on foot, since Ruth had the carriage. When townsfolk questioned as to why Nathaniel did not attend church with his wife and children, he answered "that the first parish of Lancaster always suited him and he had no reason to change."[71] Burbank's maternal grandparents were married in a Unitarian church, indicating that they too (or their families, at least) were members of that denomination.[72] What is impossible to tell, at this point, is why some moved to the Baptist church at Still River and why others did not.

This religious division with the Burbank clan helps to explain the religious tensions taking place in New England during the early part of the nineteenth

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[70] Beeson, *Early Life*, 18-19.
[71] Beeson, *Early Life*, 19-20.
[72] Beeson, *Early Life*, 33.

century. For a couple of decades, the strict Puritan Calvinism of the Boston-area Congregational churches had been slowly morphing into something else. Intellectual rigor had always been appreciated by the Puritans (hence the early creation of Harvard College); now, as Enlightenment ideals penetrated American society, those churches and their leaders came to embrace a theological liberalism that would have astounded their forbearers in the faith. These Unitarians came to emphasize the power and role of human reason in religious discussions: all doctrines should be examined in light of reason. Teachings - even sacred ones like the Trinitarian nature of God - that could not withstand a rational examination must be discarded. The later Burbank seemed to embrace an idea learned from the Universalists - Humanity was entering a new age, where the dangers of superstitious doctrines might fall by the wayside.[73]

Burbank's parents, Samuel and Olive (the third and final wife of Samuel), played a major role in shaping his religious personality. Emma Beeson, Burbank's sister, described their home-life as of the "strict New England type", although she also described her parents as more "reasonable" and more interested in "questions of human destiny with close application to practical affairs" than one might expect from earlier Puritans. In a parenthetical aside to this statement she emphasized that each day began with prayer and Bible reading.[74] Beeson remembered her parents as tolerant, inquisitive, and open-minded while also quite orthodox. In other

[73] For a succinct discussion of the emergence of Unitarianism in New England, see Sydney E. Ahlstrom, *A Religious History of the American People* (New Haven: Yale University Press, 1972), 388-402. See also Andrea Greenwood and Mark Harris, *An Introduction to the Unitarian and Universalist Traditions* (New York: Cambridge University Press, 2011); Conrad Wright, *The Beginnings of Unitarianism in America* (Hamden, Connecticut: Archon Books, 1976).
[74] Beeson, *Early Life*, 42.

words, a perfect combination of Unitarian (representing the cold, rational side) and Baptist (representing the warm, emotional side) ideals.

If Burbank's parents showed that they were traditional New England parents, and raised him in the ideal natural world of Massachusetts, they also showed that they were intellectuals, interested in the latest cultural and religious ideas. This open-mindedness is reflected in the tale told of a family attempt at "table tipping." The 1850s saw the growth of spiritualism in the United States and Britain. One historian has even called spiritualism "the religious articulation of the American Renaissance"[75] of the nineteenth century. Spiritualism offered a progressive view of humanity and its future, with a system that had no need for a hell or a climactic apocalypse of divine judgment to set things right. Instead, spiritualists offered a connection to the world of the dead (an inclusive heaven, where the goal was to ascend to the divine.[76]

Perhaps the Burbanks had become familiar with a Rhode Islander named Frances Harriet Whipple. She was a literary figure, and had written a botany textbook as well after having taught the subject for over a decade.[77] She came to embrace spiritualism, and became a medium of some reputation. In spiritualism she found an expression for her individualism, and found empowerment in ways not open to her in the usual denominations. It also gave her the courage to become involved in the reform movements of the time, as the voices from beyond the grave

[75] Cathy Gutierrez, *Plato's Ghost: Spiritualism in the American Renaissance* (New York: Oxford University Press, 2009), 3.
[76] Gutierrez, *Ghost*, 175-77.
[77] Sarah C. O'Dowd, *A Rhode Island Original: Frances Harriet Whipple Green McDougall* (Hanover: University Press of New England), 96-97.

revealed to her the social evils that needed to be corrected.[78]. Or perhaps they were simply aware of more famous mediums like Margaret, Leah, and Kate Fox, who communicated with the spirit world through two main methods. Either the spirits would "rap" an answer on a table around which the questioners gathered (often one rap for no and three raps for yes), or the spirits would "tip" or "turn" the table a certain number of times, with a certain direction (of turning or tipping) indicating the answer.

The Burbank clan must have decided to try this new craze with some of their neighbors. One evening in the early 1850s, a crowd of older family members and visitors had some success in receiving "answers" from beyond. Luther was young enough to be playing on the floor nearby, and must have been overcome with curiosity. He crawled under the table in secret during the experiment to see what was going on, to try to discover what was making the table move, only to have the table crash down onto his little fingers. To this Emma says "that was, I think, the last of table tipping in our house."[79] Whether it was because Burbank got hurt or because the attempt had actually failed matters little. The Burbanks were willing to give this early spiritualist practice a hearing in their home.

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[78] O'Dowd, *Rhode Island*, 153.

[79] Beeson, *Early Life*, 51-52. For spiritualism and table tipping, see Brett Carroll, *Spiritualism in Antebellum America* (Bloomington: Indiana University Press, 1997), 139; and Ronald Pearsall, *The Table-Rappers* (New York: St. Martin's Press, 1972), 34-41. For longer examinations of Spiritualism and its treatment in American Literature and society, see Michael F. Brown, *The Channeling Zone: American Spirituality in an Anxious Age* (Cambridge: Harvard University Press, 1997); Howard Kerr, *Mediums, and Spirit Rappers, and Roaring Radicals: Spiritualism in American Literature, 1850-1900* (Urbana: University of Illinois Press, 1972); and John J. Kucich, *Ghostly Communion: Cross-Cultural Spiritualism in Nineteenth-Century American Literature* (Hanover: Dartmouth University Press, 2004).

The story, though, also represents one more illustration of a Burbank characteristic revealing itself at a young age. Even at the age of three or four, when the table-tipping incident occurred, Burbank was presented as being inquisitive, discerning, and observational. He noticed an unusual event (the table moved), desired to know more, and independently developed a plan (crawl under the table to look) to answer his questions. With this kind of character trait, it should have been no surprise to anyone who knew the young Burbank that, whatever his chosen field ended up being, it would be one where he saw problems and discovered answers to solve them.

There was another important influence on the young Burbank that cannot be readily ignored – the Baptist Church. The churches he attended had a profound effect (later in life, in a negative sense) on Burbank's religious views. Burbank's father, Samuel, was a member of the Baptist church in Still River for 50 years after his mother, Ruth, brought him and his brother Aaron out of the Unitarian church in Lancaster. Luther's mother, Olive, joined this congregation after her marriage to Samuel.[80] Aaron grew up to become a Baptist minister, and was busy enough with ministry that he seemed to have no need to be bi-vocational – a source of familial pride.[81] It is also of likely importance for the family that they were Baptists before, during, and after the debates in Massachusetts regarding disestablishment. Perhaps the family's experiences as religious outsiders ingrained within Burbank

[80] Beeson, *Early Life*, 45.
[81] Beeson, *Early Life*, 28, 41.

stubbornness, combined with a certainty of being correct that would serve him well later in life.[82]

It would have been at this Baptist church that Luther received his first initiation in the mysteries and teachings of Christianity. Emma described this congregation as "a 'hard-shell Baptist Church", and stated that Burbank "accepted so literally its severe doctrines, and they so impressed his young mind as to make him almost morbid."[83] Most likely, this refers to a group of Calvinistic Baptists who were more open to the revivals then becoming so common during the Second Great Awakening. Emotional conversions and energetic worship services were a part of their usual practices.[84] Samuel and Olive were faithful church attenders, though, and made sure to bring their children to at least one of the two preaching services every Sunday. In an odd aside, Emma pointed out that Luther was a good cook, and was sometimes allowed to remain at home in order to prepare the family meal while the service was taking place.[85] While it may be a great exaggeration to claim that this was a harbinger of things to come, it is not beyond the realm of possibility to argue from this anecdote that while his parents attended what was described as a "hard-shell" church, filled with fire and brimstone sermons, Samuel and Olive were not necessarily themselves of that stern a theological nature. Once

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[82] For more about the debate in Massachusetts between the established Congregational Church and the Baptists over religious freedom, see William G. McLoughlin, *New England Dissent, 1630-1833: The Baptists and the Separation of Church and State* (Cambridge: Harvard University Press, 1971). See also H. Leon McBeth, *The Baptist Heritage* (Nashville: Broadman Press, 1987); William G. McLoughlin, *Soul Liberty: The Baptists' Struggle in New England, 1630-1833* (Hanover: Brown University Press, 1991).
[83] Beeson, *Early Life*, 68-69.
[84] Bill J. Leonard, *Baptists in America* (New York: Columbia University Press, 2005), 18.
[85] Beeson, *Early Life*, 57-58.

again, though, a story of Burbank's childhood demonstrates another omen of the Burbank to come. Even when young, he found something troubling about traditional Christianity, and sought relief from its teachings in whatever ways were open to him – even if it meant staying at home to prepare the family's meal for after worship.

Many of the Northern Baptist churches – particularly in New England – had adopted some form of the New Hampshire Baptist Confession of Faith that had been created in 1833. This document declared that "all mankind are now sinners, not by constraint but choice; being by nature utterly void of that holiness required by the law of God, positively inclined to evil; and therefore under just condemnation to eternal ruin, without defense or excuse."[86] Election was God's mode of salvation, and choice (wanting to be saved) or being baptized had nothing to do with it. The *Baptist Church Directory* included, besides the Confession of 1833, a longer defense of the Baptist position on Baptism and Communion. If Baptism did not save sinners, what purpose did it serve? And, why did some groups baptize infants? The *Directory* answered that parents in the past had asked ministers to baptize their children out of a misguided desire that their children might be saved. This, though, was a superstition that stemmed from an improper and unbiblical view of Baptism.[87] One practical application of this doctrine is in regard to the spiritual status of children who die as infants. For the strict Baptist (as the *Directory* and the Confession of 1833 would seem to imply), an infant that was not one of the

[86] Edward Thurston Hiscox, *The Baptist Church Directory: A Guide to the Doctrines and Discipline, Officers and Ordinances, Principles and Practices, of Baptist Churches. Embracing a Concise View of the Questions of Baptism and Communion* (New York: Sheldon & Company, 1859), 156-57.
[87] Hiscox, *Directory*, 208-09.

elect was destined for hell. In fact, any one of any age, if not one of the elect, was destined for hell, and no actions or pleadings from anyone (other than God, of course), could change this fact. The issue of possible infant damnation was one that stymied both orthodox Congregationalists and Baptists alike.[88] This doctrine was almost certainly one that helped to make Burbank "morbid", and it was one of the teachings that he would openly condemn later in life.

A book like the *Directory* was well-used by Baptists, and a passage on the specific role of the minister may have had a profound part in the shaping of Burbank's views about his own work in the realm of nature. In answer to the question of what, specifically, was the "sphere" of the minister, the *Directory* answered that he must be directly connected to a specific congregation. At the same time, though, "a minister should do good everywhere, 'as he has opportunity.'"[89] Later, the *Directory* stated that the minister must have a solid commitment to his work, and a firm belief in the fact "that this, and nothing else, is the work of life, appointed by God for him, whether it may bring joy or sorrow, honor or dishonor, prosperity or adversity." God's call should produce within the minister the effect that "the mind is led, by the Spirit, into a fruitful contemplation of the Scriptures, whose spirit and meaning, whose rich and gracious treasures, are unfolded and made plain to an unusual degree."[90] This is how many Baptists viewed the importance of the call and qualifications of their pastors, and Burbank had to have imbibed some of that doctrine into the way he viewed himself and his own work. With the latter quote, the insertion or changing of a few words would

[88] William G. McLoughlin, *New England Dissent,* vol 2, 735-36.
[89] Hiscox, *Directory*, 20-21.
[90] Hiscox, *Directory*, 62.

accurately describe the way he discussed the religious importance of his work: “the mind is led, by the Spirit *of Science*, into a fruitful contemplation of *Nature*, whose rich and gracious treasures, are unfolded and made plain to an unusual degree.” Burbank may not have pursued a career in the Baptist church (or any church for that matter), but he does seem to have thought of himself as a Minister of Nature, chosen by “God” and laden with gifts for interpreting and understanding the universe in ways that others were not.

As a young teen, though, those years as a Minister of Nature were far in the future. While Burbank attended the Academy he lived and worked on one of his uncle’s farm in Worcester, and attended a Baptist church with this family. He wrote frequent letters home to his mother and sister Emma during this stay, and made sure to inform them of his regular attendance at church.[91] At some point during this stay he had a conversion experience, and returned home to be baptized in the local river and became an official member of the Still River Baptist Church. By 1870 his family had changed Baptist churches, and now attended one in Groton Junction that was less strict than the church in Still River.[92] This may have been tied less to a change in their theological persuasion as to the fact that they moved, selling their share in the family farm to purchase a small cottage outside the town.[93] While they may have attended only Baptist churches, Samuel and Olive were somewhat ecumenical, as they allowed Burbank to sing in a local Methodist Episcopal church choir.[94]

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[91] Beeson, *Early Life*, 70-71.
[92] Beeson, *Early Life*, 68-69.
[93] Peter Dreyer, *A Gardener Touched with Genius: The Life of Luther Burbank* (New York: Coward, McCann & Geoghegan, Inc., 1975), 81.
[94] Beeson, *Early Life*, 79-80.

While he may have sung in a Methodist choir and attended a Baptist church, Burbank showed that he possessed a good sense of humor about the church in a hand-written paper dated 1873, entitled “the first chapter of the twenty-fourth book of Chronicles.” It is worth quoting in full, for reasons that will be examined below.

> Now it came to pass that the people of the tribe of Methodi began to cast about among themselves saying one unto the other, why assemble we not ourselves together for social improvement as hath been the custom among us. yea, even from the time when our fathers did powder their heads with flour, and did wear buckles of brass upon their sandals, and the priest perceiving that they spake thus among themselves gave out word unto all the people of the tribe of Methodi saying, go to now assemble yourselves together at the house of one Martha. And it came to pass on the eighth day of the tenth month, that the people did go to the house of Martha. And many there spake, saying it is meet that we should thus assemble ourselves as aforetime. afterwards spake a mighty man of the north saying, men and brethren this should not be so. I pray the let not the young people kiss one another, as hath been the custom aforetime, and did wax wroth. then spake one Frank whose surname is Young unto him. also spake Martha unto him saying, thinkest thou oh man that these young people do not know how to behave themselves. also spake the priest unto him and did desire to calm him, but he waxed exceeding wroth and did talk much with his mouth saying, men and brethren this should not be so. then marveled the damsels saying, why speaketh this man thus concerning the matter, and the young men also were amazed and spake among themselves, some saying he hath become mad, while others did say surely this man is a prophet. Nevertheless most of the people said this man speaketh righteously. Now the rest of the sayings of the wise men of the tribe of Methodi are they not all written in the book of the scribes which also giveth the names thereof.[95]

Burbank was obviously familiar enough with the King James Bible and the rhythms and cadence of seventeenth century English that he could mimic it in such a document. He was also comfortable enough to poke fun not just at the Methodists but, in an indirect way, at the Bible itself – something that could have

[95] Luther Burbank, “The first chapter of the twenty-fourth book of Chronicles,” D, 1873, LBP-LOC.

been offensive to Methodists and Baptists in particular. For this reason, this little humorous paragraph shows a growing dissatisfaction with traditional Christianity, just a few years removed from his baptism and official membership within the Baptist faith. But this was still in the future and, in the meantime, he still needed a vocation. His father intervened, and decided that Burbank should study medicine; he was then apprenticed to a local physician. He would not study medicine for long. From 1868 to 1871, Burbank experienced a series of earth-shattering events. His father, Samuel, passed away in 1868 (one more reason for the selling of the family farm shortly thereafter). Samuel had been a loving and indulgent father, but the death left Burbank free to drop medicine. What vocation he was going to pursue was not immediately apparent; his mother, Olive, seemed content to have Burbank at home.

Shortly after his father's death, Burbank became familiar with the name and work of Charles Darwin, as Burbank read with great interest Darwin's newest work, *The Variation of Animals and Plants under Domestication*. Burbank would later write, "it opened a new world to me. It told me, in plain simple sentences, as matter-of-fact as though its marvelous and startling truths were commonplaces, that variations came from cross-breeding, and that these variations seemed to be susceptible, through selection, of permanent fixture in the individual."[96] Burbank then hinted that he had been tinkering with various plants in his spare time, without any scientific order or rationale. Darwin gave Burbank a theoretical structure for that experimentation.

[96] Burbank and Hall, *Harvest*, 22.

Burbank also admitted that the furor that erupted in New England over Darwin's work provided incentive for him to want to know more about Darwin and the theory of evolution. The American Civil War had interrupted the dissemination of Darwin's 1859 publication of *On the Origin of Species* throughout the United States, delaying some of the arguments and furor over the concept of evolution, but when Darwin's *The Descent of Man* was published in 1871, those arguments grew in number and intensity. By this time, Burbank had come to respect Darwin's theory of evolution immensely, and had come to rely upon his own understanding of that theory of evolution for the future of what he saw as his life's work.[97] Interestingly enough, in an interview in 1906, Burbank admitted that he had not actually ever read *Origin of the Species*.[98] It is not clear, from Burbank's writings, how much Burbank really understood of Darwin's evolutionary theory, as will be more fully explored in a later chapter. What is perhaps more important, though, is that Burbank saw Darwin as an inspiration, and provided vocational guidance at the time that Burbank seemed to be drifting aimlessly.

With Darwin in his head, Burbank decided in 1871 to begin "truck gardening." With some financial help from his mother, Burbank purchased seventeen acres of land and began farming, both to afford him the chance to experiment as well as to make a living. Many tried to talk Burbank out of this decision;[99] farming was not seen as lucrative as industry or medicine, and there was a great deal of competition in producing fruit and vegetables for the market.

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[97] Burbank and Hall, *Harvest*, 23.
[98] Luther Burbank, "Luther Burbank: The Man and His Mind," interview with Champe S. Andrews, *New York Times*, (5 Aug 1906): SM1.
[99] Burbank and Hall, *Harvest*, 9.

Burbank admitted that he had no advantages, at first, as the other farmers were "well-established and experienced" and "all knew these secrets [of fertilizer and greenhouses] and used them better . . . than I, a mere youngster."[100] Burbank would have to seek another avenue of advantage, and with Darwin's inspiration he turned to the study of nature. Only through variations, Burbank believed, could he grow faster and better vegetables, getting them to market before his competitors could.

Burbank saw this goal – better, faster-growing vegetables – as a problem worthy of investigation. "Here was a place to use wits and ingenuity and inventive faculty;"[101] in other words, all the skills that Burbank had displayed in his young life. Burbank remembered the hot spring that provided a sanctuary for plants in the midst of the frigid New England winter from when he was a child. He came to believe "that hereditary traits and characteristics could be overcome, modified, changed, and adapted."[102] There is some measure of confusion when considering the case of the hot spring plants in regard to the role of heredity and environment. Did plants naturally die in winter because it was in their heredity? Or did the environment simply not allow them to continue? Burbank seemed to believe primarily in the former. If he could modify the environment in certain ways, he could produce changes in the heredity of the plants.

Burbank began by spending a great deal of time investigating the plants and the fruits they produced. He was not just trying to see which ones might be worthy of sale, but to discover which ones grew the fastest, or produced the most or

[100] Burbank and Hall, *Harvest*, 9.
[101] Burbank and Hall, *Harvest*, 10.
[102] Burbank and Hall, *Harvest*, 11.

largest produce, or had the largest foliage or brightest colors. All of these traits would be useful and appealing for a market gardener who wanted to make an impression on the public and increase his market share. He saved the seeds of those plants that seemed promising, that carried the traits that Burbank wanted, in the hopes that the second and third generations might produce varieties that increased those same traits, to be saved and planted anew the next year.[103] Nothing that Burbank did could be considered unusual. All of these techniques had been used by farmers for thousands of years, and were probably being used by most, if not all, of his local competitors. Burbank may have been more driven to use these techniques from a fledgling sense of scientific inquiry, though. But, if Burbank had not had an amazing stroke of luck, he might have remained nothing more than a mildly successful truck gardener in Lunenburg, Massachusetts.

Of all the vegetables he grew, Burbank considered the potato to have the greatest potential to be an incredibly valuable crop, and he actively looked for ways to improve on the varieties common in New England. However, all of his attempts to do so were unsuccessful. Crossing of the plants through pollination did not accomplish anything, and selection did not work as most potatoes were produced through cuttings, rather than grown from seeds (which could then later be pollinated). When it seemed as if Burbank's attempts at improving the potato would prove a total and abject failure, his good fortune and luck appeared. He discovered, growing on a variety of the potato Early Rose, a rarity for that variety: a seed-ball. He watched the seed ball grow and develop, hoping to harvest it at the proper time. Seeds would allow him to try to produce new varieties through cross-

[103] Burbank and Hall, *Harvest*, 11-12.

pollination. One day Burbank arrived at his field to discover the seed-ball had disappeared. Terrified, he searched the ground, hoping that an animal had simply knocked it off the plant. He found it, and wasted no more time.[104] He collected it, and kept it safe until he could decide what, exactly, he would do. After much thought and deliberation, he decided to plant the seeds that he found – twenty-three in all. When they produced plants he would cross-pollinate them with other potato varieties, try different selection methods, and see what might be produced. Growing new potatoes from seeds, rather than from cuttings from the tuber itself, would often produce varieties quite different from the parent potato.[105] What emerged was a potato that was unlike any of the others he had worked with or produced. Of the seeds planted, one produced more and larger tubers than the others. Burbank saved it, planted the cuttings, and grew more and more of this new variety.[106] What he had produced was a variety that grew fast, with an appealing shape, texture, color, and taste, and had some resistance to the potato blight that had devastated Ireland a few years before.

For months, Burbank sought a buyer for his new brand of potato, with little success. Many gardeners were not interested in an unproved variety, especially not for the price that Burbank was asking. Eventually, he found a buyer – a James J. H. Gregory – who offered Burbank $150 for his entire stock.[107] They worked out a small compromise; Gregory knew that Burbank was heading to California, so he allowed Burbank to take ten potatoes with him. The distance between California

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[104] Dreyer, *Genius*, 89.
[105] John Reader, *Potato: a history of the propitious esculent* (New Haven: Yale University Press, 2009), 29.
[106] Burbank and Hall, *Harvest*, 13-14; Reader, *Potato*, 217.
[107] Dreyer, *Genius*, 90-91.

and Massachusetts left Gregory comfortable enough to believe that Burbank's produce in California would be no challenge to his own product on the east coast. Gregory would later give Burbank one last, but unasked for, favor. When he decided upon the name under which he was going to market the potato Gregory chose to name it "Burbank's Seedling." In this way, Burbank received something greater than money from Gregory; he received the beginnings of his fame. Three years later, a prominent agricultural magazine discussed this new and very promising variety, "excellent as to quality, whether boiled or baked, but its most prominent character is its abundant yield." It promised to out produce the prolific and already loved potato parent "Early Rose." The journal also lamented the fact that Gregory had named it "Burbank's Seedling," for "should it attain the popularity he hopes for it, be known as the 'Burbank,' and nothing else."[108] This meant that Gregory would never remain connected to the potato that came to dominate the American potato market, with a later potato offspring adding the word Russet to the name.[109]

While Burbank felt that the potato was promising, he was not certain of what, exactly, to do next. He did have a word that he seemed unable to remove from his mind, however: California.[110] Two of his much-older brothers had already made the trip, and in 1874 Burbank's youngest brother, Alfred, travelled to the small town of Santa Rosa. All three sent back promising stories of the beauty and possibilities in that land. Burbank was ready to go. He had only needed a way to

[108] "A New Potato—Burbank's Seedling," *American Agriculturist* XXXVII (1878): 91, 123.
[109] Reader, *Potato*, 217.
[110] Burbank and Hall, *Harvest*, 16.

finance his journey west, and now he had the money after selling the stock of potatoes to Gregory.

In his autobiography, Burbank also credited another reason for his desire for a quick escape to California: unrequited love. He had proposed to a local woman, named Mary, only to be turned down. Feeling dejected, he "determined that [his] heart was broken."[111] That provided added incentive for him to leave and avoid having to deal with the shame of family and friends knowing that he had been rejected. There are some doubts as to the legitimacy of this part of his tale. Nothing from his early letters reveals any signs of heartbreak or forlornness; absolutely no clues that he had proposed and been rejected. Perhaps his silence was the easiest way of dealing with the pain. But perhaps this was nothing more than a later mythologizing, a way to explain the fact that he remained unmarried through most of his life, or a way to add a little bit of tragic romance to an otherwise heroic story.

For Burbank had developed a plan – he would go to California. There, he would find a way to purchase land and begin growing and experimenting on a larger scale than was possible on his small Massachusetts tract of land. He would prove Darwin's theories correct and win scientific and popular acclaim. Perhaps, in the back of his mind, he would win the heart and hand of Mary after all. He would not have to ask anyone's permission in his work, or seek the approval of friends, until well after he had proven himself. He had the ten potatoes with which to work, once he had land of his own. He had brothers who could help with some of the initial adjustments. Most of all, he had his own confidence in his abilities and his

[111] Burbank and Hall, *Harvest*, 23-24.

future success. He purchased a train ticket west in 1875, packed a few belongings, and set off to discover fortune and fame.

Chapter 2: Burbank Created

When Burbank travelled west to find his purpose he became a part of a longstanding American tradition of migration. Others in his family had already made that journey. Two older half-brothers, David and George (from Samuel's first wife, Hannah), had settled in Tomales, California, in the 1860s and began careers in banking and dairy ranching, respectively. And Burbank's full-brother, Arthur, had already made the trip to California, settling in Santa Rosa, a small town not far from San Francisco. California, for many, was a special place; one could be challenged there, and rediscover their youth and vitality.[112] For Burbank, it would be more of an extension of his young passions rather than a rediscovering.

For most of his life, Burbank did not do much traveling. Despite the fame and money that he made, he always claimed that he did not have the time to roam far from his farm. And throughout his early life in Massachusetts his only extended stay away from his childhood home was during his time at the Lancaster Academy when he lived with an uncle. In other words, Burbank was a bit of a homebody. The presence of three brothers in California – and the emotional and possible financial support they could provide – gave Burbank the courage to take the long trip to the West Coast. Thirteen years later, Burbank would make a return visit to Massachusetts to visit the family and friends that he had left behind. The years between those two rail trips saw Burbank grow from a poor, hired hand, to owning his own company.

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[112] For the role of California and the West in the lives of two other similar travelers to California at this time, see Matthew Kaiser, "A Joy on the Precipice of Death: John Muir and Robert Louis Stevenson in California," in *Nineteenth-Century British Travelers in the New World*, ed. Christine DeVine (Burlington: Ashgate Publishing Company, 2013), 23-47.

When Burbank made his initial trek to California in 1875, transcontinental rail travel was growing more common and gaining in prominence. Just a few years before Burbank made his trip west, Susan Coolidge, a travel writer for *Scribner's Monthly*, gave her suggestions on traveling to California. Full of practical advice, the article also evoked some of the mystery and adventure that could be discovered by trekking across the now-connected coasts. She first advised that the traveler should take care to leave late enough in the spring to avoid the worst of the snows that could continue to fall in the Rocky Mountains. She also recommended leaving early enough in spring "to see California in green perfection and overlaid with her marvelous mantle of wild flowers."[113] This clearly reveals that, from a tourism standpoint, one of the deciding factors to visit California was to discover its natural beauty; Burbank settled on California, in part, because of this kind of botanical reputation.

Coolidge then listed the various costs involved with transcontinental travel: three hundred dollars for a roundtrip ticket to and from San Francisco; meals for seven or eight days at three dollars a day; and at the least twenty-two dollars for a round-trip berth in a Pullman sleeping car, which she considered essential. "Without this latter the journey would be unendurably fatiguing; with it, it is surprisingly comfortable."[114] Once in California, the traveler could expect to find hotels for around 3 dollars a day, and could plan on spending seven to eight

[113] Susan Coolidge, "A Few Hints on the California Journey," *Scribner's Monthly* VI (1873): 26.
[114] Coolidge, "Hints," 26.

hundred dollars for hotels, carriages, and food for two months of sightseeing.[115] Obviously, this was not a trip for the average, working-class American to take.

Coolidge mentions “Chinamen,” for the first time, while discussing laundry (as might be expected). There was no hint of overt racism in her brief remarks, though. After noting that a dozen items of clothing could cost three to five dollars for cleaning at a San Francisco laundry, “the Chinamen, who wash very fairly, ask considerably less.”[116] She mentioned these Asian laborers again when discussing eating situations at the train stations along the journey, pointing out that while many of the way-stations had good and inexpensive restaurants, everyone dashed off the train to the same few places to eat. This often meant that, “as happened to ourselves at Cheyenne, the rush of diners is so great that you find it impossible to catch the eye of the Chinese waiter till it is too late to make him of the slightest use.”[117] Burbank would make similar kinds of remarks during his initial travel to and stay in California.

While she may have been encouraging travel to California (and all the requisite spending money to see the sights), Coolidge was not greatly impressed with the city of San Francisco. She stated that “[t]here is nothing in San Francisco itself to detain the traveler many days.”[118] One could enjoy a good sail around the bay, study the flowers and meander along the unusual streets, and admire the mix of nationalities evident. The visitor had to explore the Chinese quarter, for example, and take in the many photographic exhibits of local scenery. San Francisco’s

[115] Coolidge, “Hints,” 26.
[116] Coolidge, “Hints,” 27.
[117] Coolidge, “Hints,” 27-28.
[118] Coolidge, “Hints,” 29.

greatest strength, though, was founding the number of outside excursions available: one could visit San Raphael, Monte Diablo, Santa Clara, San José, Santa Cruz, Geyser Valley and Canyon, Napa Valley, and Yosemite Valley. Santa Cruz was pointed out as a must-see for all flower lovers, full of "such roses, geraniums, jessamines, and passion-flowers grow nowhere else as run riot in every little garden."[119] Despite the proximity to San Francisco, there was no mention of a visit to Santa Rosa, Burbank's adopted city, although that should hardly be surprising as it was, in many ways, Burbank who established Santa Rosa as a travel destination. The point is that Coolidge and other travel writers regarded San Francisco as a useful stop to get one's bearings, rest from the transcontinental travel, and decide where to visit next.

When it came to transcontinental travel, Burbank was one who did not take Coolidge's advice. Instead of renting a sleeping bunk, he managed to find comfort and rest only in his seat, sleeping in oddly contorted ways until he arrived in San Francisco. In this manner he was able to save some much-needed money, and made some acquaintances on the train due to the provisions (a large collection of sandwiches and a cake) that his mother sent with him. Along the way, he sent back to Olive a few notes and cards to chronicle his westward trip, which followed the rail line from Worcester, Massachusetts, to Buffalo, Niagara Falls and the Suspension Bridge, and through Canada to Detroit. Somewhere between London, Ontario, and Detroit, Burbank noted that he "had a treat in crossing Suspension Bridge by moonlight," and "the forests are too beautiful for one to describe."[120]

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[119] Coolidge, "Hints," 29.
[120] Luther Burbank, Canada, to Olive Burbank, Massachusetts, October 1875, LBP-LOC. Also found in Beeson, *Early Life*, 84.

Near Council Bluffs, Iowa, Burbank wrote a longer message that pointed out that "all have to enjoy the scenery" and sounded like a veteran traveler (or a young man heading out for adventure) when he added: "the babies makes some noise at times, but I can settle down in a seat and go to sleep amid all the noise and sleep as sweetly as I ever did in my life." Towards the end of this letter, Burbank added that he had "seen a few Indians, but no Chinamen. Have eaten all my sandwiches, one-half of cake. Shall have enough to carry me twice as far as I have to go. I buy coffee twice a day. It is very nice."[121] A little further west Burbank noted that "the passengers are enjoying themselves looking at prairie dogs, antelopes. . . . The prairies were on fire last night. A finer sight I never saw, but called by the settlers "Prairie Demon."[122] There is little in these letters that sounds unique; throughout all of these hastily penned notes, Burbank sounds like most other westward travelers: full of excitement, and quick to point out the expected things about which family and friends back home would want to know.

Having left around the twentieth, he arrived in San Francisco on the twenty-ninth but did not sit down to write a longer letter back home until he had arrived and settled in Santa Rosa where his brother Arthur was already living. Interestingly, Burbank believed (as did many others) that the prairies were mainly not arable describing them in one place as "desert for more than a thousand miles, and with one exception I saw not a tree for the whole 1000 miles" and that it "is more sterile than a bare granite rock, with poison water, mines, coal beds, salt, and

[121] Luther Burbank, Council Bluffs, Iowa, to Olive Burbank, Massachusetts, October 1875, LBP-LOC. Also found in Beeson, *Early Life*, 85. Emphasis in original.
[122] Luther Burbank, Cheyenne, Near the Black Hills, to Olive Burbank, Massachusetts, October 1875, LBP-LOC. Also found in Beeson, *Early Life*, 86.

alum springs and every other nasty chemical. Someone made the remark that they thought it must be the roof of H—."[123] In contrast to this barren wasteland, he thought the mountains themselves were beautiful, and surrounded by impressive forests and herds of animals; but nothing could compare with the California valleys when they finally came into sight. "On down into the great Sacramento Valley, where the gardens and front yards are ornamented with palm trees, century plants, fig trees, etc.—it was a rare feast for me. . . . I cannot describe the joys I felt in looking at the gardens and feeling the healing balmy breezes."[124] Burbank was pleased with his decision to migrate to California and Santa Rosa.

In another, "secret" part of the letter (not to be shared with friends), Burbank described Santa Rosa as "the chosen spot of all this earth as far as Nature is concerned." Praises fill the next few sentences: the "climate is perfect," "the air is so sweet that it is a pleasure to drink it in," "I almost have to cry for joy when I look upon the lovely valley from the hillsides." In addition, he pointed out that "a family can live here, I am quite sure, for about one-half what they can there and far more comfortably."[125] This is, perhaps, the main reason why Burbank would be keen to limit this information to direct family members; if people in Massachusetts really knew how wonderful California was, they might flood the region and some of the advantages that Burbank sought would be lost. However, Burbank sounds like all the Boosters, who openly encouraged people to come to California. In fact, the whole point of calling it a secret may have been to make it more public and make

[123] Luther Burbank, Santa Rosa, California, to Olive Burbank, Massachusetts, 31 October 1875, LBP-LOC. Also found in Beeson, *Early Life*, 87-88. Emphasis in original.
[124] Ibid., and Beeson, *Early Life*, 89. Emphasis in original.
[125] Ibid., and Beeson, *Early Life*, 94. Emphasis in original.

California seem even more attractive of a destination – because people came. The population of California in 1860 was 380,000; five years after Burbank's arrival, it had grown to 865,000; and by 1910 it had reached 2.38 million inhabitants. Boosters like to point out that Americans had, for generations, held up the agricultural life as the good life; California's fertile soil, mild temperatures, and healthy climate made it the ideal state to pursue the good American life.[126] Whether Burbank had read any of these materials is unclear; what is obvious is that he could have written them.

There are two small sections of this large letter home that might be easily glossed over, but are of great importance for this study. First, in an almost off-hand way, Burbank mentioned Chinese immigrants again. While he had commented during the initial train trip that he had seen some Indians, the Chinese were absent from his travel picture until his arrival in California. Burbank's attitude toward them was mixed. At first, he sounded positive: "there are some Chinamen in this place. I like them very well. They know about four times as much as folks generally give them credit for." This statement makes one wonder just what it was that Burbank found admirable; was it their hard work ethic, the cheap laundry prices (already noted by the travel writer Coolidge), their cultural history? Unfortunately, the modern reader is left to guess, and Burbank followed up this positive statement with a negative one: "They are disagreeable in some respects."[127] Once again, one is left to wonder what was "disagreeable." Despite the arguments over Chinese

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[126] Paul J. P. Sandul and Kelley Galbreath, *California Dreaming: Boosterism, Memory, and Rural Suburbs in the Golden State* (Morgantown: West Virginia University Press, 2014), 39, and 45.
[127] Luther Burbank, Santa Rosa, California, to Olive Burbank, Massachusetts, 31 October 1875, LBP-LOC. Also found in Beeson, *Early Life*, 90.

immigration and their presence in California, these letters appear to be the only time that he mentions them at all. This is highly unusual as this issue dominated California politics for decades, and eventually led to the first immigration act of the United States to bar immigration from a specific part of the world – the Chinese Exclusion Act of 1882. While it may be possible to interpret Burbank's silence as a form of sympathy toward the Chinese laborers (with his career just getting started, to voice support for Chinese workers could have been economically dangerous), Burbank never spoke up about the issue later in life either. His willingness to weigh in an any other issue that journalists cared to ask makes it is more likely that he simply did not feel this to be a topic worth discussing.[128]

However, the most important part of this letter is a brief "moral" section which lies in between Burbank's description of San Francisco and his description of Arthur's now-bearded appearance. First, he noted that San Fransicso was full of alcohol, as "liquor-selling is the great business of that great city." Burbank stated that he had to go to great lengths to find normal water, as most places only dealt in liquor. But Burbank would not consume alcohol, and his justification for this is worth further evaluation.

> I made a vow on my way over that I would not touch a drop of any kind of liquor, and I shall keep it. Of those who do not drink there are a great many, and they are almost without exception the leading and most respected men, and who also own most of the property and do the important business. A young man who will not drink here and is good-natured and makes folks like him, and who minds his own

[128] For more on the Chinese experiences in California during this time, see Jean Pfaelzer, *Driven Out: The Forgotten War Against Chinese Americans* (New York: Random House, 2007); and Ronald Takaki, *Strangers from a Different Shore: A History of Asian Americans*, updated and revised edition (New York: Little, Brown and Company, 1998), 79-131.

> business, has ten thousand chances of success where the same qualities would have one chance in the states.[129]

It must be pointed out, first of all, that this was not a temporary vow. Burbank would remain a teetotaler throughout his career, not only abstaining from alcohol but also from tobacco and most other stimulants. Later, when he had gained fame and had extensive agricultural projects occurring, he would boast that he made sure never to hire anyone who drank or smoked, as their hands could not be trusted to safely do the delicate work involved. This commitment, though, does not seem to stem from any religious motivations. Burbank did not discuss abstinence from alcohol as a Christian duty, or drinking as a sin; this was contrary to older temperance movement ideas.[130] Instead, it was all tied to worldly success: "leading and most respected men" did not drink, and neither did those who are in charge of "the important business[es]" of the area. Temperance was about middle-class values of respectability and status, in which drinking got in the way.[131] Burbank had his sight set on becoming one of these leading figures in the town, and so he was going to do whatever it took to accomplish that task.

Over the next few weeks and months, Burbank would continue to send home letters full of glowing reports of life in California interspersed with more

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[129] Luther Burbank, Santa Rosa, California, to Olive Burbank, Massachusetts, 31 October 1875, LBP-LOC. Also found in Beeson, *Early Life*, 89. Emphasis in original.

[130] See, for example, the study of working-class individuals in Rochester who sought to emulate their bosses by converting to evangelical, temperance-supporting Christianity in Paul E. Johnson, *A Shopkeeper's Millennium: Society and Revivals in Rochester, New York, 1815-1837* (New York: Hill and Wang, 1978), especially 55-61.

[131] See Jack S. Blocker, Jr., *American Temperance Movements: Cycles of Reform* (Boston: Twayne Publishers, 1989); and Joseph R. Gusfield, *Symbolic Crusade: Status Politics and the American Temperance Movement* (Urbana: University of Illinois Press, 1963).

depressing personal – and familial, in regard to Alfred – notes. He praised the air and climate for helping people think: “anyone can study or write or think with a connected clearness which is delightful. Mental effort is no effort at all. I should rather write a week here than five minutes there.” The new railroad in town was helping to boost the population, as the cheap and arable land could be better accessed. Alfred, though, often found himself with little or no work. Perhaps, Burbank wrote, because he “runs a little too much on cheek.”[132] The abundance of fresh fruit ensured that “fruit cans are not for sale here.”[133] He had found a local who knew some things about the local plants, and Burbank found time to gather specimens to take to learn what, exactly, they were. “My botany tells the names of only a few California plants. Some of them have no names.” Squash fields could be found “in which there are probably five hundred that two men could hardly lift,”[134] and cabbage fields in which “nearly every head of which was as large as a washtub.”[135] Burbank spent a couple of weeks visiting his older brothers David and George in Tomales, California, resting and eating and enjoying the new sights and sounds. There he saw the Pacific Ocean for the first time, and pointed out that “the great billows against the rocks sounds . . . like heavy thunder or a train of cars.” Burbank also visited the nearby town of San Rafael, of which he had read a book while still back in Massachusetts. Olive had remarked that the author had given a “description that was all a vain show,” but Burbank now stated that, having seen

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[132] Luther Burbank, Santa Rosa, California, to Olive Burbank, Massachusetts, 7 November 1875, LBP-LOC. Also found in Beeson, *Early Life*, 94.
[133] Luther Burbank, Santa Rosa, California, to Emma Burbank, Massachusetts, 9 November 1875, LBP-LOC. Also found in Beeson, *Early Life*, 98.
[134] Ibid., and Beeson, *Early Life*, 98-99.
[135] Luther Burbank, Santa Rosa, California, to Emma Burbank, Massachusetts, 14 November 1875, LBP-LOC. Also found in Beeson, *Early Life*, 101.

the city in person, “the man who wrote it did not tell half its beauties.” When Burbank arrived back in Santa Rosa, however, to the “shanty” that he shared with Alfred and a couple of other workmen, he found it in a state of disarray. Alfred had not had much work while Burbank was gone, but neither had he (or any of the other roommates) done much housekeeping, turning the house into “more like a hog’s nest than anything I had even seen before.” A long day of washing and cleaning on Burbank’s part restored the hut to some semblance of order.[136]

Alfred was not the only member of the family to struggle with finding work. Burbank also often found himself unemployed. He had expected to do some lathing work for a new hotel being built in town,[137] but the work got behind and the job was delayed. The lack of work depressed him; “I am in great haste to get something to do that will be permanent. Have done almost nothing yet.” He looked for land near his older brothers, to no avail. He hoped, upon returning to Santa Rosa, to find somewhere he might just work for board, “but the abundant rains had put a complete stop to all kinds of work.” He walked to another nearby town, Petaluma, to look for work, stopping by various farms along the way with no success. Once in Petaluma, though, he finally found a nurseryman, W. H. Pepper, who was willing to hire him for $50 a month (or $30 a month if room and board was included).[138] Burbank lasted in this job until the spring of 1876, when he was forced

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[136] Luther Burbank, Santa Rosa, California, to Olive and Emma Burbank, Massachusetts, 30 November 1875, LBP-LOC. Also found in Beeson, *Early Life*, 103-106.
[137] Luther Burbank, Santa Rosa, California, toe Emma Burbank, 14 November 1875, LBP-LOC. Also found in Beeson, *Early Life*, 100.
[138] Luther Burbank, Santa Rosa, California, to Olive and Emma Burbank, Massachusetts, 5 December 1875, LBP-LOC. Also found in Beeson, *Early Life*, 109.

to return to Santa Rosa. Living above the greenhouse had made him gravely ill; a woman in Santa Rosa kept him alive with milk from her cow.[139]

When Burbank had recovered enough, he managed to find a small plot of ground for rent in Santa Rosa and set to work as a gardener. Burbank had not been ignoring the only plant he brought with him from Massachusetts – those ten potatoes left over from his deal with Gregory. He had planted them on a small plot of George's land, but not for sale. Instead, he planted and replanted them for a couple of years until the ten had grown into a crop large enough to justify trying them on the market.[140] Until they were ready, though, Burbank would have to try other things on his plot of rented land in order to be successful.

Scattered throughout these letters home are references to social concerns that would influence his later views on eugenics. For example, in one letter Burbank pointed out the growing local concern with insanity. State authorities "can't build hospitals fast enough to house them." Most of the so-called insane were men, and the two leading causes were separation from family and friends (and the restraints that having those two influences around might bring) and alcohol.[141] The family did not have to worry about Burbank going insane, as his older brothers George and Dave were close enough to visit for advice, and he had already established that he would avoid alcohol so the second cause of insanity would also not apply.

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[139] Beeson, *Early Life*, 114.
[140] Dreyer, *Genius*, 111.
[141] Luther Burbank, Santa Rosa, California, to Olive and Emma Burbank, Massachusetts, 5 December 1875, LBP-LOC.

In addition to social issues like insanity, Burbank also peppered his letters with references to his attendance at various local churches. Phrases like “on my way to meeting last evening I stopped at the post office” and “am going to the Baptist meeting this evening” appear in one letter.[142] Another reported that he “went to meeting this forenoon – had a good sermon – house crowded.”[143] This shows that whatever religious or theological misgivings he might have about some aspects of Christianity, he still found something comforting and important about the experience of Christian fellowship, and this most likely also kept his religious mother happy as well.

It was perhaps the combination of Burbank’s illness and his financial struggles that led his mother Olive to move to Santa Rosa with Emma in tow in the summer of 1877. Olive bought a house with some land in town, and allowed Burbank to rent part of it. His work improved slowly; he posted a profit of $15.20 the first year, and $70 the next.[144] One reason the work was slow was his desire to produce seeds, and not to rely on full-grown fruit and vegetables to sell. However, most of the farmland around Santa Rosa was still being used to grow wheat; only later were they converted to fruit and nut trees, for which Burbank was poised to provide the seeds and young plants. In 1879, seventy-five percent of farm acreage in California was devoted to grain production (primarily wheat). By 1929 (three years after Burbank’s death), the percentage had dropped to twenty-six percent. Fruit production had been at five percent in 1879 but had risen to thirty-five percent

[142] Ibid., and Beeson, *Early Life*, 100, 102.
[143] Luther Burbank, Santa Rosa, California, to Olive and Emma Burbank, Massachusetts, 5 December 1875, LBP-LOC.
[144] Beeson, *Early Life*, 114-115.

in 1929.[145] Burbank's plant productions paid a major part in this transition. But that was all still in the future. To help make ends meet, Burbank continued to work as a carpenter by day (when there was work) and tend to his plants at night; this is also partially explained by the fact that California's economy continued to struggle, financially, in the post-Civil War years as the mining industry declined in importance.[146] It was the transition to fruit that helped California become a profitable and agricultural giant.[147] After the second year, though, as more famers changed their fields over from wheat to fruit, Burbank saw his sales grow: in 1879 profits reached more than $350, and doubled the next year. In 1881 he recorded profits of over $1,100.[148]

Burbank saw a radical rise in his local fame to go along with these higher profit lines. An important local banker named Warren Dutton came to Burbank in March of 1881 with a business proposition that other local nurserymen had rejected. Dutton had decided to grow prunes[149] commercially and wanted twenty thousand prune trees available for purchase at the end of the year. Everyone thought it was impossible. Could Burbank have the trees ready for planting in nine months?

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[145] Alan L. Olmstead and Paul W. Rhode, "The Evolution of California Agriculture 1850-2000," in *California Agriculture: Dimensions and Issues*, ed. Jerome Siebert (Berkeley: University of California Giannini Foundations, 2003), 4-5

[146] David Alan Johnson, *Founding the Far West: California, Oregon, and Nevada, 1840-1890* (Berkeley: University of California Press, 1992), 233-268.

[147] Robert W. Hodgson, "The California Fruit Industry." *Economic Geography* 9 (October 1933): 337-355.

[148] Dreyer, *Genius*, 112-13.

[149] Although in modern English a "prune" is considered to be a dried plum, the documents of the time use the words differently and, in the interest of consistency, I have chosen to use the words used in the particular documents.

The story of this almost Herculean task became a famous one in Burbank's lore. He agreed to the challenge, and soon came up with a possible way to accomplish the task. Since it would be impossible to produce that many viable prune plants from seed in so short a time, another method would be needed. Burbank decided to put his knowledge of grafting to good use. He first selected a tree that was fast growing, and produced buds the first season as well – the almond tree. He planted these by the thousands, and made arrangements with a local orchard to have prune buds available. When the almond trees were ready to bud, the prune buds were grafted in the almonds' places, and the top of the almond tree was broken to force the growth into the grafted buds. With this method, Burbank had 19,500 now-prune trees available for Dutton (and the remaining 500 trees arrived soon in the next year). Dutton called Burbank a "wizard," a word and nickname that would stick and soon be applied to him again and again over the ensuing decades, as Burbank seemed to accomplish tasks that could only be done through magic or amazing feats of intellect.[150]

In later years, when Burbank reminisced about this event, he credited it with being the culmination of many important steps. Just as Darwin's *Variation of Plants and Animals under Domestication* had encouraged Burbank to devote his life to plants and helped to send him across the continent to California, another Darwin book pushed Burbank's thinking along different lines. In 1877 Burbank found a copy of Darwin's *Cross- and Self-Fertilization in the Animal Kingdom*. In it, Darwin argued for the advantages plants found in those processes; but Burbank thought of

[150] Harwood, William Sumner, *New Creations in Plant Life: An Authoritative Account of the Life and Work of Luther Burbank* (New York: The Macmillan Publishing Company, 1905), 14 -15; Dreyer, *Genius*, 114-15.

the benefit to human beings. “If Nature had developed an incredible system by which plants could re-create and diversify and improve themselves *for their own benefit* and advantage, why should not Nature be induced to employ that same system *for the benefit and advantage of man*?”[151] With the massive prune challenge, Burbank wrote about realizing two things.

> First, I felt sure that I could bring about, in a few plant generations, what Nature required hundreds or even thousands of years to achieve; secondly, I saw that such experiments as I would have to conduct must be performed, not with one or half a dozen plants, but on a broad scale—literally by wholesale. In short, to borrow the language of industry, I not only had to *speed up production*, but I had to *build up and maintain quality of production*![152]

If Burbank was being honest in his remembrances, this moment set the stage for the rest of his career. Darwin had established for Burbank the fact that plants could and did change over time (evolution) as well as the fact that plants did this for particular advantages. If this happened unconsciously through natural selection, why would it not be possible for someone (like Burbank) to guide the plants through the same process? However, Burbank believed that it would require industrial scale production of a sort; thousands of plants, most of which would end up being destroyed, to produce the few traits here and there that Burbank desired. This combination of human selection with this level of production would wed science with purpose, all wrapped up in a sellable bow; Burbank was, after all, concerned on some level with earning a living and being recognized as successful and important. On another level, the later Burbank was also doing something very subtle. While industrial leaders like Ford and Edison were able to mass produce

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[151] Burbank and Hall, *Harvest*, 33-34. Emphasis in original.
[152] Burbank and Hall, *Harvest*, 41.

products and have them protected by patent laws and copyrights, Burbank and other plant producers were not. By arguing this way, Burbank was making the conscious connection between what he did with plants and what other inventors did with wood and metals and chemicals. In arguing (unsuccessfully during his lifetime) for the granting of legal patents on plant products, he was also making the argument that he deserved the same respect, honor, and protection as every other inventor. The themes of Darwinian application, industrial production of plants, connections to humanity, and Burbank's scientific acumen would be reappearing over the ensuing decades.

Over the next few years, Burbank saw his business and plant offerings continue to grow. In 1884 and 1885 he began importing some plum trees from Japan that featured blood-red pulps, and soon began marketing them as "novelties" in the United States. These varieties became more popular than the local wild varieties and more popular than the imported European varieties, helping to give Burbank a profit of about ten thousand dollars in 1884. These rising profits helped Burbank purchase more acres of land in the nearby town of Sebastopol. The "Gold Ridge Farm" soon came to be known as the "experimental garden,"[153] especially after Burbank's radical decision in 1888 to sell off part of his business. He left the path to sure and stable profits behind (producing general goods for market) to pursue a more experimental future. He sold off the nursery side of his business to a co-worker, R. W. Bell, for thirteen thousand dollars. Getting rid of the regular fruit, vegetable, nut, and other plants side of the business would allow Burbank to spend his time developing unique plant products. Once a plant had

[153] Dreyer, *Genius*, 115.

been developed and produced, he would sell the entire product to another nurseryman to market and produce for himself. Burbank would become the initial producer of the new plant product, from which others could then make a profit.

Before settling down to this new business, though, Burbank planned to take a well-earned vacation. He decided to travel east, going back to Massachusetts to visit family and friends that remained there. And so, in September, he set out in much the same fashion as he did thirteen years before. Even though he could have afforded a sleeping car this time around, he still chose to only pay for the basic seat, "curling up on the seat like a jackknife"[154] when he needed to rest. Once again, he wrote numerous letters back to his mother to keep her informed about who he was seeing and what he was doing, and, once again, these letters are often full of moments of interest to the modern reader. He rode part of the way with a Civil War veteran from Chicago who had been blinded in the conflict. Despite his blindness, the veteran had become quite wealthy and was heading to Saratoga Springs in New York but "puts his hands on my shoulder to go everywhere."[155] While Burbank had been too young to serve or to have been involved in that conflict, he was willing to help this now-wealthy man around.

Once back in Massachusetts, Burbank found himself more popular and well-known than he appeared to be expecting. Everyone wanted a chance to talk, and ask questions, and seek his advice about various matters. "All know me here, and say that I have not changed a bit. I know nearly all the old faces as well as ever.

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[154] Luther Burbank, Albany, NY, to Olive Burbank, Santa Rosa, California, September 1888, LBP-LOC, and Beeson, *Early Life*, 122.
[155] Luther Burbank, Albany, NY, to Olive Burbank, Santa Rosa, California, September 1888, LBP-LOC, and Beeson, *Early Life*, 122.

Don't you think I am paid for the weary journey?"[156] Friends arranged to have him be one of the main speakers at a special assembly of the Lancaster Academy, which Burbank considered an honor. Later, he ran into Gregory (who had purchased his potatoes), who "expects to have a monument raised on the spot where the Burbank potato originated," so Burbank showed him the spot in the woods where the seed ball was found. The Fitchburg Fair was opening, and Burbank also spent some time there helping "to arrange the Fitchburg Hall with flowers and fruits."[157] This may appear, at first glance, that Burbank was a nineteenth-century celebrity; however, those days were still in the future for Burbank. In reality, this was more the case of a local boy, coming home to family members and friends who still remembered him from his youth, who knew that he was now the proud owner of a profit-turning business in far-away golden California. He did not make the same waves once he traveled outside of this home area.

This trip also involved some business activities, as Burbank spent time collecting different plants and seeds, which he reported on numerous occasions in his letters home; he also frequently sent packages of plant materials back to California. He visited greenhouses, and talked with the locals about what they had also what they wanted. That may have been another reason that Burbank made a special visit to Gregory at his place of business, to discuss other avenues of financial partnership.[158]

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[156] Luther Burbank, Fitchburg, Massachusetts, to Olive Burbank, Santa Rosa, California, 19 September 1888, LBP-LOC, and Beeson, *Early Life*, 123.
[157] Luther Burbank, Lunenburg, Massachusetts, to Olive Burbank, Santa Rosa, California, September 1888, LBP-LOC, and Beeson, *Early Life*, 124-25.
[158] Luther Burbank, Boston, Massachusetts, to Olive Burbank, Santa Rosa, California, 3 October 1888, LBP-LOC, and Beeson, *Early Life*, 126.

This was not just a time to visit family and friends and collect samples for later work projects; it really was a vacation, as Burbank visited important sites in Boston like the Bunker Hill Monument.[159] He was also a part of a travel group called the "Raymond Excursion" that carried people to and through the sites of Washington, D.C. He left by steamer from Boston and headed to New York, but still could not quite leave work behind. He had purchased a box of blueberries and a box of huckleberries from Nova Scotia, and planned on removing the seeds in his cabin during the trip to send back to Santa Rosa.[160] After a couple of days they arrived in Washington, and the next day went on a long tour through the city.

> Saw the original Declaration of Independence, visited the White House, the President's reception room, Weather Bureau, Senate while in session, House of Representatives, Supreme Court (which is trying the Bell Telephone case). Most of the prominent men were pointed out; then through the Capitol greenhouses and grounds, and up to the dome of the Capitol, which is over three hundred feet in height.
>
> It was a glorious autumn day. Could see the Potomac, the President's farm, and the charming, beautiful city of Washington. Saw Butler House Balines, saw the theater where Lincoln was assassinated, and the house opposite, where he died; the depot where Garfield was shot, Washington Monument, United States Fish Commission, Agricultural Department, and Patent Office, and the residences of hundreds of noted men.[161]

While these were the usual places to visit (and still are for modern tourists), there was also free time built in to the schedule to allow the travelers to visit particular sites of individual interest. Burbank planned on returning to climb the Washington

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[159] Luther Burbank, Boston, Massachusetts, to Olive Burbank, Santa Rosa, California, 3 October 1888, LBP-LOC, and Beeson, *Early Life*, 126.
[160] Luther Burbank, Steamer to Long Island Sound, to Olive and Emma Burbank, Santa Rosa, California, 8 October 1888, LBP-LOC, and Beeson, *Early Life*, 127.
[161] Luther Burbank, Washington, D.C., to Olive and Emma Burbank, Santa Rosa, California, 10 October 1888, LBP-LOC, and Beeson, *Early Life*, 128.

Monument, and spend more time in the Patent Office; he also hoped to revisit the Botanical Gardens to gather some more of the "very rare seeds" he had already accumulated.[162] The travel party of around eighty would later visit Mount Vernon, and there was also a dinner reception with President Grover Cleveland to come. Mount Vernon made quite the impression on Burbank.

> I cannot tell you how many wonderful things I saw there. All the rooms at the great farmhouse are just as he left them; furniture, clothes, dishes, flute, liquor bottles, etc.; trees that he planted, sheds that he built, his letters, etc., in his own handwriting; in short, we seemed to be trespassing in his home. How short a time it seems since this great Republic was born![163]

Burbank enclosed with the letter some leaves from trees from Mount Vernon, noting in an aside that "the cherry tree was not there." While the residence of the great, dead, former president made an obvious impression on Burbank, he said nothing about the dinner reception at the White House with President Cleveland.

Before returning to Boston, he sent one last letter from Washington. In it, he noted that he had been to Arlington, Virginia. They may have visited the early memorials there, or the Arlington House (previously owned by Robert E. Lee and his wife's family), or the Freedman's Village that had occupied part of the land since the War.[164] Any of the options are intriguing, but Burbank also noted that they were on their way to visit "the Darkey Church this evening" so perhaps the

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[162] Luther Burbank, Washington, D.C., to Olive and Emma Burbank, Santa Rosa, California, 10 October 1888, LBP-LOC, and Beeson, *Early Life*, 128.
[163] Luther Burbank, Washington D.C., to Olive Burbank, Santa Rosa, California, 12 October 1888, LBP-LOC, and Beeson, *Early Life*, 130.
[164] For more information about the history of Arlington National Cemetery, see Robert M. Poole, *On Hallowed Ground: The Story of Arlington National Cemetery* (New York: Walker & Co., 2007).

Freedman's Village was included at least in part.[165] It is important to point out that of all the letters Burbank wrote home that his sister Emma reproduced in her book, this letter was not one of them. The reference to the "Darkey Church" might have seemed inappropriate in the late 1920s, after Burbank's death, for a person of his social status. Whatever the case for the exclusion of this letter, there is little doubt that Burbank came into contact with former slaves and their descendants while on this trip to Washington, and that may have played some role in his later racial views which will be explored more extensively in a later chapter.

While Burbank may have finished siteseeing in Washington, his trip east was not yet finished, as he would still spend an additional two weeks visiting with family and friends back in Massachusetts, as well as collecting more plant samples for his future endeavors. There were certainly times when he talked about the landscape and the east in loving terms in these letters home. In an early one, Burbank wrote "every tree, rock, and house looks ten times more homelike than those palms, abalone shells, etc., in your grounds"[166] and after returning from Washington added that he had "enjoyed it beyond words to express, am healthier, happier, and handsomer than ever you saw me; and if business would live through it, in any way, I would extend my time, for I have got more real happiness out of the last month than for fifteen years."[167] Everything was lovely, and he admitted that his "happiness would be complete if you in California could look over the valley

[165] Luther Burbank, Washington, D.C., to Olive Burbank, Santa Rosa, California, 14 October 1888, LBP-LOC.
[166] Luther Burbank, Lunenburg, Massachusetts, to Olive Burbank, Santa Rosa, California, September 1888, LBP-LOC, and Beeson, *Early Life*, 124.
[167] Luther Burbank, Wilbraham, Massachusetts, to Olive Burbank, Santa Rosa, California, 17 October 1888, LBP-LOC, and Beeson, *Early Life*, 132.

with me."[168] These were not statements of regret concerning his move to California, though. For almost every compliment was combined with a caveat like "[I] do not think that I could ever stay here"[169] and "I should never be contented to live here and no sensible Californian would either."[170] And scattered throughout was another common sentiment expressed by those Burbank met. In one of his last letters before returning home, Burbank noted that "everybody would go to California if they could"[171] and, in an earlier letter, that he would "take back a couple of carloads of friends"[172] if it was possible. Massachusetts, for Burbank, was a decent and comforting place to visit, but not one suited for his work and home.

The return trip to California was relatively uneventful, but there were two events that helped shape Burbank's future. First, he had plenty of time to reflect on the overwhelmingly positive responses he received from those back home. The outpouring of respect and honors bestowed on him gave Burbank the feeling that he was on the cusp of greatness. This feeling, though, was based purely on his own confidence in his abilities as well as this outpouring of respect and love from his friends and family, both in Massachusetts and back in California, as there are no signs that Burbank yet had any relevance on the national scene. There were no references to Burbank in such publications as the *New York Times*, *Washington*

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[168] Luther Burbank, Lancaster, Massachusetts, to Olive Burbank, Santa Rosa, California, 20 October 1888, LBP-LOC, and Beeson, *Early Life*, 135.
[169] Luther Burbank, Lunenburg, Massachusetts, to Olive Burbank, Santa Rosa, California, September 1888, LBP-LOC, and Beeson, *Early Life*, 124.
[170] Luther Burbank, Lancaster, Massachusetts, to Olive Burbank, Santa Rosa, California, 20 October 1888, LBP-LOC, and Beeson, *Early Life*, 135.
[171] Luther Burbank, Fitchburg, Massachusetts, to Olive and Emma Burbank, Santa Rosa, California, 28 October 1888, LBP-LOC, and Beeson, *Early Life*, 143-44.
[172] Luther Burbank, Fitchburg, Massachusetts, to Emma Burbank, Santa Rosa, California, 26 October 1888, LBP-LOC, and Beeson, *Early Life*, 139.

Post, or the *Boston Globe* in the 1800s. Even the *Los Angeles Times* only referred to him a handful of times in the 1800s. Much later, after Burbank's death, a biographer would interview Dr. Anderson, a dentist in Santa Rosa who as a young man had worked at the Burbank home as a secretary and accountant from 1887-1889. Anderson recalled a conversation in which Burbank admitted to him "that the world had experienced many Christs—at least thirteen; that they assumed different forms and might arise from time to time, and hinted that he, himself, he felt, was approaching that status."[173] Setting aside the religious implications of such a statement as well (Burbank's attitudes toward religion will be dealt with in greater detail later), the hubris displayed shows that Burbank was not just confident in his abilities, but he believed that his work – and the possibilities of his work – could bring great benefits, and (if one continues with the Christ theme) even possible salvation to humanity.

The second result was that Burbank fell in love. On the train he met a young widow from Denver named Helen Coleman. Instead of returning to Denver, she followed him to Santa Rosa, where they were soon engaged, although it would not be until September 23, 1890, that they were officially married. The marriage was not a happy one. She may have found the social life in Santa Rosa a little thin and her new husband a little vain and preoccupied with work (which he certainly was), and he may have found her nagging, annoying, and a little dangerous. The story was later told that she pulled a revolver on him one night to get him to leave their bed, and later slammed a screen door in his face, giving him two black eyes and,

[173] Walter L. Howard, "Luther Burbank: A Victim of Hero Worship," *Chronica Botanica* 9 (1945): 375.

most likely, a broken nose as well.[174] It perhaps did not help that Olive and Emma still lived on the premises. Olive was always strong-willed, and obviously exerted great control and influence over Burbank's life. Emma remained a great champion of everything Burbank did, and was later described as "a true friend and disciple, devoid of ulterior motives, she never let him down. . . . Incessantly she fed his natural ego and cultivated the Messiah-ship idea."[175] Once again, there is a reference to this notion of Burbank as a Christ-figure. Helen, for her part, apparently called Olive "a vile serpent, an old vicious cat" and referred to Emma and other relatives as "a nest of cats and snakes and low-lived dogs."[176] The relationship became so strained between them that Burbank moved into a workroom above the stable,[177] and when his divorce was finally granted on October 19, 1896, he claimed that they had not lived together for four years. She was given a settlement of eighteen hundred dollars, and allowed to take the house furniture back to Denver with her, and so she exited Burbank's life forever.[178] Needless to say they had no children, and when Burbank did remarry, he was much older, and remained childless, a disappointment for a man that everyone said loved children.

While Burbank's marriage might have been failing, his work was preparing for a very important moment: the publication of his first official catalog of novelty plant items. Surely Burbank spent a great deal of time considering what to title this publication. One would have thought it normal to use one's name, so "Burbank's

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[174] Dreyer, *Genius*, 129.
[175] Howard, "Victim," 377.
[176] Howard, "Victim," 319.
[177] Dreyer, *Genius*, 129.
[178] Official divorce papers, LBP-LOC, and Dreyer, *Genius*, 154-55.

Novelties" or something of the like would have been appropriate. Instead, Burbank would use a title that would cause trouble for him from many sides: "New Creations in Fruits and Flowers." Religious individuals would criticize the use of the word "New;" had not God made all things in the beginning? Soon after its publication, Burbank was invited to attend a local church to be honored – or so he thought. After seating Burbank in the front row, the minister used his sermon to attack Burbank "as a competitor of Omnipotence," and prayed for his "awakening."[179]

Scientists would also challenge the use of the word "New" as well, for it was not acceptable to call a mere hybrid a "New Creation," nor would it be appropriate to give a newly-discovered species that title. A hybrid would not be considered new since it was merely the combination of two things that already existed (much in the same way that children would not be considered "new" in relation to their parents) and so would not be a true new species. However, Burbank made clear with the message on the front of the catalog that he had not chosen those words lightly or blindly.

> The Fruits and Flowers mentioned in this list . . . are more than new in the sense in which the word is generally used; they are new creations, lately produced by scientific combinations of nature's forces, guided by long, carefully conducted, and very expensive biological study. . . . [They are] exemplifications of the knowledge that the life-forces of plants may be combined and guided to produce results not imagined by horticulturists. . . . Limitations once thought to be real have proved to be only apparent barriers. . . . We are now standing just at the gateway of scientific horticulture, only having taken a few steps in the measureless fields which will stretch out as we advance into the golden sunshine of a more complete knowledge of the forces which are to unfold all the graceful forms of garden beauty, and wealth of fruits and flowers, for the comfort and happiness of Earth's teeming millions.[180]

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[179] Burbank and Hall, *Harvest*, 77-78.
[180] Luther Burbank, "New Creations in Fruits and Flowers," 1893, Luther Burbank, Trade Catalogs, Benson Ford Research Center, Dearborn, Michigan.

Burbank emphasized, right from the beginning, that he truly did mean new to the universe. He also emphasized that there was science involved: not luck, or amateur guessing, or trial and error, but studious, respectable scientific experimentation had produced the products that Burbank was now offering for sale. There was also a mystical side to things that Burbank would certainly explore in later writings, as he was fascinated with the idea of "forces" or "life-forces" that could be found innately in plants and animals. And, it must be pointed out that there is a bit of almost religious imagery (which points, once again, to Burbank as a Christ-figure) in the heavenly and Edenic picture of "golden sunshine" and "wealth of fruit and flowers, for the comfort and happiness" of the whole world. Some of this was undoubtedly the exaggerations of the consummate salesman; these products were, after all, being advertised in order for someone to pay for the rights to own, produce, and distribute these new plants. However, with Burbank it also seems like it is not quite exaggeration in his mind; his enormous confidence in himself, and the possibilities of his work, did seem to give him the belief that he could do anything if given enough time and space.

Later in the catalog Burbank would add similar thoughts to the ones already expressed.

> There is no possible room for doubt that every form of plant life existing on the earth is now being modified, more or less, by its surroundings, and often rapidly and permanently changed, never to return to the same form. When man takes advantage of these facts, . . . when added to all these combined governing forces we employ the other potent forces of combination and selection of the best combinations, the power to improve our useful and ornamental plants is limitless. . . . There is no barrier to obtaining fruits of any size, form or flavor desired, and none to producing plants and flowers of any form, color or fragrance; all that is needed is a knowledge to guide

> our efforts in the right direction, undeviating patience and cultivated eyes to detect variations of value.[181]

With this catalog, Burbank staked out his positions concerning the theory of evolution and the many different to that theory that were being debated in American society at the time. While this will be explored in greater detail in the next chapter, there are some points that need to be made now. Far from shrinking from the debate over evolution, Burbank willingly embraced it. His work gave him no reason to doubt that plants (and therefore animals and humans) change over time. The question for Burbank was now that humanity had figured out how nature operates, should or would mankind continue to leave things up to nature? Burbank's answer to this question was clear: humanity had the power and the opportunity to harness the forces of nature to create whatever people might need and want, and Burbank had already begun this process. Another matter to point out is that there is no mention of God throughout the catalog; what was needed most was not a religious or godly heart but knowledge, patience, and "cultivated eyes," all of which, of course, were supposed to point to Burbank as the harbinger of this new world of possibilities.

The Burbank catalog of 1893 was so popular that he issued a new one in 1894, and for many years after, as he continued to produce items for sale. Many of these products sold for more than a thousand dollars, so that when nurserymen like the Stark Brothers (who spent around nine thousand dollars on items from the 1893 catalog) and John Lewis Childs (a businessman from New York who spent almost six thousand dollars), Burbank's reputation was secure, and the products

[181] Luther Burbank, "New Creations in Fruits and Flowers," 1893, Luther Burbank, Trade Catalogs, Benson Ford Research Center, Dearborn, Michigan.

they purchased remained profitable for years afterward. One of the items purchased by the Stark Brothers was the Van Deman Quince, named for a professor and the head of the Pomological Division[182] of the Department of Agriculture. It was still being offered for sale in the 1970s catalog.[183] While the current catalog no longer offers the Van Deman Quince for sale, their website still mentions it to be a Luther Burbank product and will provide assistance for those still seeking it.[184] The naming of the quince shows another activity of Burbank's – the honoring of friends and would-be supporters by naming new products after them. A new plum that appeared in the 1894 catalog was named after Professor Edward Wickson of the University of California; however, the fact that some people rated the Wickson plum poorly (particularly in the east, considering it a worthless hybrid) proved to be a slight embarrassment to the honorable professor.[185]

There were also varieties that, while interesting, did not prove to be very profitable, such as the "Iceberg" blackberry and its later development, the "Snowbank." As both of the names imply, they were blackberries with white pulps. As one critic noted, though, America had little interest in a white blackberry, and even though the Iceberg was sold to reputable nurseryman John Lewis Childs, it never amounted to much.[186]

Praise rolled into Santa Rosa's post office daily, carrying letters from notables such as professors, officials of national organizations like the American

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[182] Devoted to the study of fruit.
[183] Dreyer, *Genius*, 143.
[184] Stark Brothers website, http://www.starkbros.com/products/fruit-trees/quince-trees/van-deman-fruiting-quince, accessed 6/22/2015.
[185] Edward J. Wickson, *California Nurserymen and the Plant Industry: 1850-1910* (Los Angeles: The California Association of Nurserymen, 1921): 47.
[186] Dreyer, *Genius*, 149.

Pomological Society, and nurserymen both national and international including ones from New Zealand, Canada, Australia, and South Africa.[187] The result was that orders flowed in, as did requests for other catalogs, products, and even advice. Burbank was forced to explain in his second catalog that routine questions were best left to the agricultural magazines, government officials, and university experiment stations. He was simply too busy;[188] this implied that the work he was doing was of far greater importance than those other groups who could be bothered to deal with trivial matters. By 1897, sales were over sixteen thousand dollars and still climbing.[189] His gamble in selling off the nursery-side of the business had paid off. Nearing fifty, Burbank had become a household name among nurserymen not only in the United States but across the English-speaking world as well. Soon, he would become a household name. With that notoriety would come increased scrutiny, some of which Burbank would not handle well.

Much of the material in this section might seem frivolous, unimportant, or tangential. The point, however, has been to establish that over these first two decades in California Burbank built the reputation, financial success, and celebrity to be worthy of a voice during these intellectual and cultural debates in American society. When discussing if evolutionary change was possible, and how it occurred, Burbank could speak from out of his experiences and practices, and his initial catalog of new products made clear that he believed that not only was evolution a fact, but that its powers could and should be harnessed for the betterment of

[187] Dreyer, *Genius*, 152.
[188] Luther Burbank, "New Creations in Fruits and Flowers," 1894, Luther Burbank, Trade Catalogs, Benson Ford Research Center, Dearborn, Michigan.
[189] Dreyer, *Genius*, 157.

mankind. When political and intellectual figures debated eugenic programs, Burbank could and did weigh in with his background in working with plants. Who better to discuss the issues of good breeding if not the master Burbank? And finally, with the debates between religious conservatives and liberals that would play so prominent a role in the twentieth century, Burbank's celebrity would give his religious positions a weight and importance that far outstripped what could be considered his actual importance in religious circles. With the turning of the clock to a new century, Burbank was eager to announce his ideas to a world itching to hear them.

Chapter 3: Burbank the . . . Scientist? Expert?

Burbank's fame would continue to grow throughout the twentieth century. His continued development of new fruits and flowers brought him ever increasing household recognition. It helped that Burbank always seemed willing to give an interview or respond to a written question on almost any topic of interest under the sun. Reporters seemed to know that they could always get a good quote from Burbank – some of which would land him in trouble. At the same time, academics (primarily on the West Coast) began publishing articles that brought him more connections to the growing scientific community in the United States and around the world. This brought into sharp relief issues about science and evolution, in particular.

One question that was hotly debated as Burbank's work extended into the early decades of the twentieth century was if Burbank could be considered a real scientist or not. If not, what was he? Something less distinguished, but still important? Or was he nothing but a charlatan and a crook? For the scientific community, the answer was almost universally a no; whether they viewed him as a charlatan or not was up for debate. For the general public, though, the answer was a resounding yes; they found in Burbank's story and work a usable and useful science that helped explain the way the world worked as well as offering an optimistic view of future possibilities.[190] The ongoing discussion about the position of Burbank influenced not only the way his work was viewed by specialists and the

[190] For an extended visit of this conversation among scientists, see Pandora, "Knowledge Held in Common," especially 486-488.

general public, but also played a significant role in the remembrance of Burbank (or lack thereof) in the years after his death.

Another key issue for debate was over the idea of evolution itself. The Enlightenment had started the process of taking the initiative for Creation away from God and placing it within nature itself, and eventually led to the idea that living things are mere machines, including human beings. This idea was modified and expanded by Georges Louis Leclerc, the Comte du Buffon, who argued for a "living matter" component that animated and directed the machines of living beings, and this became the "vital force" that separated creatures from other inanimate objects.[191] Some of this kind of thinking will appear in one of Burbank's earliest writings discussed in a later chapter. If God was not personally acting and directing the course of all natural events, then what was? The ground was prepared for alternate theories.

The publication of Darwin's *On the Origin of Species* in 1859 had brought the idea of natural selection into prominence. Animals and plants, under pressure from their environment, changed and adapted over time to try to survive. Some species made changes that improved their survival, while others did not and for Darwin this process was driven by natural selection as opposed to direct activity from God. While a few scientists held out in opposition to the idea of evolution (most notably Louis Agassiz), most had come to accept the idea of evolution by the

[191] Jacques Roger, "The Mechanistic Conception of Life," in *God and Nature: Historical Essays on the Encounter between Christianity and Science*, eds. David C. Lindberg and Ronald L. Numbers (Berkeley: University of California Press, 1986), 287-289.

end of the nineteenth century. It was Darwin's explanation that evolution worked through natural selection that was debated.[192]

Some scientists tried to hold on to a role for God in the process of evolution. Asa Gray, in particular, argued that God used natural selection to direct the course of history to fulfill his plans and purposes.[193] Others, such as T. H. Huxley, saw no need to resort to this kind of fusion with Christianity; however, Huxley's language and ethical concerns often drew upon Christian ideas and terms – but science had taken the position of God in his system.[194] This kind of borrowing from Christianity appears to have been across the board, as even religious skeptics still relied on the symbols and language of the Christian society of the times to discuss evolution and Darwinism.[195]

While everyone was basically using the same terms and categories for this conversation, there was still no consensus on exactly how evolution worked itself out, although the rejection of a "special creation" by God was almost universal by the end of the nineteenth century despite the ideas of Gray and a few others.[196] Some preferred a Lamarckian approach that allowed for habits and other acquired characteristics to be passed down from one generation to the next, as this seemed to provide a more optimistic and less deterministic view of evolution, and this was

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[192] A. Hunter Dupree, "Christianity and the Scientific Community in the Age of Darwin," in *God and Nature: Historical Essays on the Encounter between Christianity and Science*, eds. David C. Lindberg and Ronald L. Numbers (Berkeley: University of California Press, 1986), 357-358. Peter Bowler, *Evolution: The History of an Idea*, 3d ed. (Berkeley: University of California Press, 2003), 180-187.
[193] Dupree, "Christianity and the Scientific Community," 360-361.
[194] Dupree, "Christianity and the Scientific Community," 363-364.
[195] Dupree, "Christianity and the Scientific Community," 351-352.
[196] Ronald L. Numbers, *Darwinism Comes to America* (Cambridge: Harvard University Press, 1998), 24-48.

especially true among liberal Protestants who accepted the idea of evolution.[197] Even some scientists who were not concerned about the theological possibilities of Lamarckian evolution found it more palatable than pure natural selection, and it was not until well into the twentieth century – after the rediscovery of Mendel's ideas the development of genetics – that Lamarck was discredited and Darwin's natural selection made sense.[198] Burbank weighed in on the issue of evolution frequently throughout his career, and there can be little doubt that his thoughts on evolution influenced the debates in America over the implications of Darwin's theories.

A third issue combines the previous two together. Burbank claimed to be able to direct the path of evolution; that this was, in effect, what his work was all about. He also continuously stressed that this work was for the betterment of humanity. This made sense in a Lamarckian view of evolution, but became a lot more complicated with the development of genetics in the early decades of the twentieth century. Scientists like De Vries and Tshermak (who will be discussed later) in rediscovering the ideas of Mendel moved the discussion away from inherited characteristics and into other debates, such as the idea of mutations.[199] But for Burbank, his work was along the same lines as that of Thomas Edison.

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[197] Frederick Gregory, "The Impact of Darwinian Evolution on Protestant Theology in the Nineteenth Century," in *God and Nature: Historical Essays on the Encounter between Christianity and Science*, eds. David C. Lindberg and Ronald L. Numbers (Berkeley: University of California Press, 1986), 379.

[198] For a discussion of this whole process, see Peter Bowler, *The Eclipse of Darwinism: Anti-Darwinian Evolution Theories in the Decades around 1900* (Baltimore: Johns Hopkins University Press, 2003); for Lamarckian evolution see especially 58-106.

[199] Peter J. Bowler and Iwan Rhys Morus show how the rediscovery of Mendel and these new debates were rooted in the cultural contexts of the time in their *Making Modern Science* (Chicago: University of Chicago Press, 2005), 201-205.

Both were “fellow-students . . . in the University of Nature,” and worked “both of us to the one end that Nature’s laws might be codified, interpreted, and set to work for the betterment of mankind.”[200] In the eyes of Burbank – and much of his supportive public - this gave his work a moral power beyond that of the usual scientist – a useful consideration since Burbank remained a businessman and was never a non-profit university scientist. It would leave him open to other charges, though, as the publication of his ideas and accomplishments in the popular media sometimes results in a backlash when things do not turn out the way they have been hyped.[201]

The debate over the scientific nature of Burbank’s work featured prominently in articles published in the early twentieth century. Edward Wickson was a professor at the University of California at Berkeley and was perhaps the first scientist to publish on Burbank and his projects. Wickson wrote these initial three articles in 1901 and 1902 and followed them with further articles in 1905 and 1908. Wickson embodied the issues at the heart of this question about Burbank as scientist, sometimes seeming to be a whole-hearted champion of his work, while at other times a critic.

After a brief biographical sketch of Burbank’s background, Wickson began his first article with a virtual tour of the house and grounds, pointing out that Burbank was very limited in the amount of “furniture and bric-a-brac of his profession,” nor did Burbank have a great library in which to usher in the prominent visitor. However, Wickson wanted to assure his readers that the absence of lab

[200] Burbank and Hall, *Harvest*, 196.
[201] Marcel C. LaFollette, *Making Science Our Own: Public Images of Science 1910-1955* (Chicago: University of Chicago Press, 1990), 183.

equipment and books did not mean that Burbank was illiterate or uneducated. On the contrary, Burbank was "widely read in biological sciences in all its leading lines" and "his strange insight and memory enable him instantly to seize upon and retain the facts and principles which he desires for direct use, or as contributions to the fullness of his conceptions." The elaborate machinery that others used to experiment on plants was not necessary for Burbank because of the scope of his gardens; nature itself was Burbank's lab.

> Mr. Burbank never surrounded himself with elaborate appliances of research because he believed that he was dealing with very simple propositions. By patient search through the infinite variety of manifestations, which appeared in connection with each experimental effort, he saw principles and laws revealing themselves so clearly that he could reach their demonstration, with the naked eye and hand. For such a gifted seer neither weird altar fires, nor incense cloud nor ecstatic state could add to insight. He could hear the 'still small voice' without preparatory earthquake or whirlwind. Like David of old he could do his work with smooth pebbles from the brook; and he cast aside the elaborate armament of his scientific brethren lest it should impede his movements.[202]

In the midst of religious imagery, Wickson implied that Burbank had made a conscious decision not to work in the orthodox, scientific way. For his work, the usual lab was not needed, for he had a (perhaps divine?) gift that, combined with his extensive reading, allowed him to see the laws of evolution at work and put them to use.

Wickson finished this first article by pointing out that there had been some scientific resistance to Burbank and his work. But, he argued, at this point there should be none. In 1899, the esteemed members of the Association of American Agricultural Colleges and Experiment Stations had met in San Francisco. One day,

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[202] Edward J. Wickson, "Luther Burbank: The Man, His Methods and His Achievements; Part 1," *Sunset Magazine* 8 (1901-02): 60-62.

they traveled to Burbank's gardens to examine his work for themselves. Afterward, they published their glowing reports of his work and methods. Later, upon their return to complete the meeting, they named Burbank an honorary member – the only person so honored at that meeting.[203] From Wickson's perspective, there had been some admirers who had done harm to Burbank by using hyperbole that verge on the superstitious, giving him titles like "Wizard." Wickson contended, though, that Burbank's reluctance to correct them seems to have been due to his genial and kind nature, rather than hubris.[204] Wickson openly hoped that Burbank would find the time to write about his work for himself, which would set the record straight and allow others to build upon the work and scientific advancements Burbank was making.[205] This would be a common theme among Burbank's supporters for years. Wickson seemed to ignore the fact that Burbank was also a salesman, whose profit margin was usually determined by the unique and spectacular nature of his plant products – or as they were advertised to be.

Wickson's third article sought to outline some of Burbank's greatest and most important achievements to that point. Wickson began with a long quote from a fellow professor (of botany) from Berkeley, Winthrop Osterhout. Osterhout praised Burbank for ranging into areas unthought of by the regular scientists, like himself; people should think of Burbank as an adventurer, opening up whole new areas of exploration and discovery. Osterhout also praised Burbank for helping to

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[203] *Proceedings of the Fourteenth Annual Convention of the Association of American Agricultural Colleges and Experiment Stations* (Washington, D.C.: Government Printing Office, 1901): 68.
[204] Burbank referring to himself as a possible Christ-figure (see previous chapter) might belie this point a little bit.
[205] Wickson, "Burbank, 1," 68.

prove that species were not fixed; his demonstration of the vast varieties within a single plant species helped provide valuable ammunition in the debate over evolution and natural selection. This can be seen in the "Evolution Garden" Burbank planted at Stanford (which will be discussed later). Finally, Osterhout gave Burbank credit for not getting bogged down with minute details; instead, Burbank remained committed to the broad, general, scientific principles to be discovered, which was the mark of the "true scientist."[206]

Wickson devoted the rest of his third article to seven areas in which Burbank had made significant contributions to science and the world. First, he had provided new varieties that could thrive where older species had failed, such as with wild plums. Burbank's crossing of wild plums with ones imported from Japan produced new varieties that revolutionized the production of plums in America.[207]

Second, he had produced plants that blossomed earlier than normal and others that blossomed later than normal, thereby increasing the growing season by a few months. For obvious reasons, producers would benefit greatly from having more options on when to plant, even allowing for multiple plantings of the same crop in the right kind of environment, a valuable achievement in the growing agricultural economy of California.

Third, he had increased the productivity of individual plants, thereby allowing a single plant to produce sometimes double the normal amount of fruit or nuts. In related fashion, Burbank's fourth achievement was with "stone fruits" (those with a significant pit at the center). Burbank had produced varieties with a severely limited

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[206] Edward Wickson, "Luther Burbank: The Man, His Methods and His Achievements; Part 3," *Sunset Magazine* 8 (1901-02): 278.
[207] Wickson, "Burbank, 3," 279.

pit, causing some to even be considered “stoneless.” This greatly improved the canning of plums with an easier removal of the central seed.

The fifth and sixth are also connected. He had improved the taste and smell of the fruit and blossoms. And, he had changed the colors of many, creating an almost infinite possibility for gardens. Related to this, Burbank wrote that America’s greatest weakness was

> being satisfied and complacent about things – of not getting stirred up enough over our own lacks. There is another need we have; the need for more beauty. We have neglected this aspect of life too much; we have taken what we had and not minded very much to increase our aesthetic appetites or to feed them. We need beautiful lumber and we need shapely and beautiful ornamental trees; we want fragrant flowers – a thousand things that make life well worth living in the shape of ornament and beauty and things that, to many of us, seem superfluous, or at least not absolutely necessary. But they are, just the same![208]

This spoke to the idea that people needed variety; that beauty itself was good for the soul. While there is no evidence that Burbank was familiar with the work of the contemporary William Morris, Burbank’s emphasis on “aesthetic appetites” for all people fit well with Morris’ idea that “beauty is a marketable quality.”[209]

Finally, Burbank’s cross-pollination had produced new combinations. The crossing of the plum and the apricot produced the plumcot. A blackberry and raspberry cross (named by Burbank the Primus) was a hybrid that grew true from seed, a marvel for the time, as most hybrids produced seeds of one parent type or the other rather than of their combined traits.[210] Without plants that “grew true from

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[208] Burbank and Hall, *Harvest*, 36.
[209] Quoted in Charles Harvey et al., “William Morris, Cultural Leadership, and the Dynamics of Taste,” *The Business History Review*, 85 (Summer 2011): 245-271. Quote is found on page 256. See also Elizabeth Carolyn Miller, “William Morris, Extraction Capitalism, and the Aesthetics of Surface,” *Victorian Studies*, 57 (Spring 2015): 395-404.
[210] Wickson, “Burbank, 3,” 281-83.

seed," the work of hybridization would have to be repeated each generation to produce the desired fruit and plants.

These achievements were not without cost, however. Not every task Burbank began ended with success; in fact, most ended with failure. Early on in his experiments, he was uncertain if there were any limits to what cross-pollination could achieve. So, he found a plant that produced a berry only when pollinated by hand, and planted thousands of them in an isolated lot. Then, sections of the lot were pollinated with different types of fruit pollen. When seeds were produced, those were then planted in another lot to see what kinds of fruit plants might emerge. Some of the plants died shortly after sprouting, while others died after blooming. Most of those that survived produced beautiful blossoms, but only two produced any fruit at all. While the fruit was like none ever seen before, the fruit produced no seed of its own, so there was nothing that could be preserved or continued beyond this generation. So, Burbank did what he normally did when faced with failure: uprooted the sixty-five thousand hybrid berry bushes and had a giant bonfire, the first of fifteen that summer.[211] All of this reinforced the idea that Burbank was not really a wizard. Rather, it demonstrated he was a patient, tireless worker engaged in great endeavors for limited and uncertain rewards.

These articles helped to disseminate more concrete and rational appraisals of Burbank's work for a wider audience, but it should be noted that they appeared not in a scientific journal, nor a popular magazine such as *National Geographic*. They appeared in *Sunset*, the official magazine for the Southern Pacific Railroad.

[211] Wickson, "Burbank, 3," 284.

Despite the obscure nature of this academic appraisal, it would help to bring Burbank international recognition.

A leading Dutch scientist came to visit Burbank after hearing reports of these grand experiments, and his visit would add more prestige to what Burbank was doing. Hugo de Vries had emerged as a leader in the fledgling science of genetics, and was one of the key promoters of Gregor Mendel's theories. A Professor at the University of Amsterdam, de Vries was intricately involved in the worldwide scientific debate over the process of evolution. He had theorized that the length of time necessary for evolution to take place (an important component of the debate) could be shortened by positing the appearance of mutations – offspring that were radically different from their parents. De Vries came to visit California because of the many new fruits and flowers emerging from there, and specifically hoped to find proof for his mutation theory among the experimental gardens of Burbank. He would later write a glowing review of Burbank's work that would be published in *Popular Science Monthly*, and would also include information about Burbank in a later book.[212]

De Vries arrived in Santa Rosa in July of 1904. With him were two other leading European scientists, Svante Arrhenius of Sweden and Jacques Loeb of Germany, as well as Burbank's professor friends from Berkeley, Wickson and Osterhout.[213] De Vries described Burbank as "*the* man who creates all the novelties in horticulture." His work "requires a great genius and an almost

[212] Hugo de Vries, *Plant-Breeding: Comments on the Experiments of Nilsson and Burbank* (Chicago: Open Court Pub. Co., 1907).
[213] Hugo de Vries, "A Visit to Luther Burbank," *Popular Science Monthly* 67 (1905): 331.

incredible capacity for work, together with a complete devotion to the purpose in view, to accomplish such results. Burbank possesses all these qualifications."[214] He also praised Burbank for not being consumed with profit, even though he was ultimately compensated for his experiments when the successful products were sold off to merchants. Instead, "the sole aim of all his labors is to make plants that will add to the general welfare of his fellow human beings."[215] Statements like this added credence to the altruistic nature of Burbank's work; he often said that he was not in it for the money, and he certainly would never become wealthy along the lines of a Rockefeller or Ford, even if he was financially comfortable.

Just as Wickson had pointed out the benefits to be gained from a stoneless plum, de Vries admitted this was one of the primary reasons he had wanted to see Burbank. He had read of just such a variety in one of Burbank's seed catalogs and deemed it impossible. During the visit, Osterhout told de Vries of another doubting visitor, Professor Liberty Hyde Bailey of Cornell. Not daring to take a giant bite into the plum, Bailey used his knife to pare away layer upon layer of plum until the small, almond-like pit was revealed.[216] Before seeing it with his own eyes, Bailey believed it would take a team working over a couple of generations to produce this kind of fruit; instead, it had taken Burbank (by himself) around a decade. So de Vries made a point to ask Burbank about this, hoping it would provide some insight into their scientific debates. De Vries admitted that he was disappointed by what he found out. Far from revealing some secret knowledge about evolution or the appearance of mutations, Burbank's pit-less plum was merely the result of

[214] De Vries, "Visit," 329.
[215] De Vries, "Visit," 333.
[216] De Vries, "Visit," 334-35.

hybridization and cross-pollination, aspects of Burbank's hard work and efforts to bring such a tree into existence. What this told de Vries was that Burbank's work did not produce any "new prime characteristics;" instead, Burbank merely strove to accentuate some traits while decreasing others.[217]

De Vries also reported that Burbank believed he could bring out "latent or sleeping characters" from plants. Some traits may have been held in check by other traits; selection and cross-pollination allowed some of these dormant or invisible traits to now become visible. What emerged from these experiments could never be predicted, though, which was one reason why Burbank practiced his experiments on such a large scale. But, what emerged might be valuable down the road for later experiments or even later generations of the plants.[218]

De Vries concluded by pointing out that Burbank made good use of the advantageous California climate, which allowed him to work faster and on a larger scale than anyone in Europe. While it had taken fifty years for European plant-breeders to produce the Amaryllis varieties then in vogue, Burbank had been able to produce greater products and faster.[219] Like others before and after him, de Vries praised Burbank for the scope of his work: "the magnitude of Burbank's work excels anything that was ever done before. . . . The number of fruits and flowers which he has improved is unequaled. Others confine themselves to one or two general; he takes hold of everything." He was also praised for being willing to fail,

[217] De Vries, "Visit," 335-36.
[218] De Vries, "Visit," 341.
[219] De Vries, "Visit," 343.

as the impossible crossings of plants could not be seen in advance; they had to be learned in practice. [220]

De Vries would later expand on these thoughts with a book that dealt with Burbank and other plant breeders. Once again, he praised Burbank that "his aim is not the accumulation of wealth, but to contribute to the welfare of other men by giving them better food, better fruits, and more beautiful flowers." A few years of reflection had led de Vries to say that Burbank was "not engaged in pure scientific research," but he was still doing something extraordinary.[221] Despite this slightly modified appraisal of his work, the comments by de Vries helped to contribute to Burbank's reputation in the public world, even if it would contribute to those who were growing more skeptical in the scientific community.

Another key appraiser of Burbank during these early years of the twentieth century was Dr. David Starr Jordan. As a young man, Jordan became involved in natural history courses and programs after attending some of Louis Agassiz's famous nature "lab camps" in the mid-1800s.[222] Jordan continued his formal education and became an acclaimed ichthyologist, a marine biologist who specialized in fish. Despite his early connection to Agassiz, Jordan came to accept and defend evolution, as well as eugenics, as will be discussed later.

Stanford University had been founded by Leland and Jane Stanford in 1885. Leland was a rich industrialist who had made his fortune in the railroad and was also a former governor and senator from California. Together, they had founded

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[220] De Vries, "Visit," 346-47.
[221] Hugo de Vries, *Plant-Breeding: Comments on the Experiments of Nilsson and Burbank* (Chicago: Open Court Pub. Co., 1907): 159.
[222] Sally Gregory Kohlstedt, *Teaching Children Science: Hands-on Nature Study in North America, 1890-1930* (Chicago: University of Chicago Press, 2010): 20-21.

the university to honor their son who had died as a teenager from typhoid fever, and the Stanfords invited Jordan in 1891 to come be the first president of the new university. At the time, Jordan was president of Indiana University, and had brought new success and prestige to that institution. Jordan was just the sort of proven scientist and administrator to guide Stanford University through its formative years.

However, the new University would struggle with financial problems, especially after Leland's death in 1893. It would have been natural for Jordan to seek ways to bring in bigger names and raise the profile of Stanford, so that is perhaps why he reached out to Burbank in 1904, writing a letter to request a tour of Burbank's gardens and the chance for himself and another Professor, Dr. Vernon Kellogg, Professor of Entomology, to discuss his work, specifically the connection to evolutionary theories then being developed. Jordan and Kellogg would collaborate on many works, including a book about evolution.[223] Burbank welcomed such a visit, telling them to "come well loaded with questions, for many of them may touch directly on some points along which I have been working in plant life" and he would "take pleasure in giving you any of my experiences and observations."[224] The three men had some knowledge of one another, but this would be their first real encounter as the two well-established scientists and university professors visited the self-taught plant expert.

Jordan and Kellogg ended up having to delay their visit, so it was not until a few months later that they were able to visit Burbank. The visit of two esteemed

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[223] David Starr Jordan and Vernon Kellogg, *Evolution and Animal Life: An Elementary Discussion of Facts, Processes, Laws and Theories Relating to the Life and Evolution of Animals* (New York: D. Appleton and company, 1907).
[224] Luther Burbank, California, to David Starr Jordan, Stanford University, LS, 7 March 1904, LBP-LOC.

scientists to Burbank's gardens did not go unnoticed by the local press. One paper reported that

> it is in the interest of scientific work on which they are collaborating that Dr. Jordan and Professor Kellogg will be here. The work is on evolution, a scientific subject on which Prof. Kellogg is considered on [sic] of the world's foremost authorities. He was recently appointed an honorary membership in the French Academy of Sciences. Dr. Jordan and Prof. Kellogg expect to derive much valuable information and facts potent to their work from Mr. Burbank's long experience and practical tests in the world of evolution.[225]

The visit would also spur both visitors to write articles for *Popular Science Monthly* that, just as Wickson's article before, helped to increase Burbank's reputation. In his article, Jordan began by calling Burbank "the most skillful experimenter in the field of the formation of new forms of plant life by the process of crossing and selection."[226] The casual reader might miss all the qualifications that Jordan included with that statement and choose to focus purely on Burbank as "the most skillful experimenter." The article went on to describe, with numerous illustrations, the various projects in which Burbank was engaged. Jordan kept detailed notes during his visit (as well as two following ones that were a part of this article), and made sure to run the explanations and quotes by Burbank before publication to ensure that what Jordan presented was, in fact, Burbank's own words and descriptions.

Burbank, through Jordan, argued for the naturalness of his work; for those who might look down on the rationality of focusing entirely on cross-pollination and the production of hybrids, Burbank reminded his readers that those were the

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[225] *Santa Rosa Republican*, "Evolution the Subject," 26 May 1904; found in Scrapbook 4, page 126, LBP-LOC.
[226] David Starr Jordan, "Some Experiments of Luther Burbank," *Popular Science Monthly* 66 (1905): 201.

primary methods of nature itself. He was quite insistent: "*All evolution and improvement are dependent on crossing*." Nature had created numerous ways to accomplish this natural selection and evolution; "Bees and other insects, as well as the wind, cross plants, but they do not work intelligently, therefore rarely to any advantage economically to man."[227] Here, then, was Burbank explaining once again his over-arching purpose. Nature produced varieties through crossings, but they were blind crossings; Burbank produced varieties through crossings, but they were intentional crossings. The goal was better fruit and flowers to help humanity.

Jordan did more than just write nice things about Burbank, though. His visit to Burbank's gardens convinced him that Burbank had something to offer the fledgling scientists of Stanford University and so, in the fall of 1905, Burbank was offered a lectureship position. It was never to be a real teaching position; Burbank did not have the credentials to be a full-time professor, nor did he have the time to spare away from his work in Santa Rosa. Instead, he went down to Stanford one or two times a semester to give a lecture, or sat around a table with students to answer questions about his work. He gave the same (or quite similar) couple of lectures every year, to different groups of students. That way, he could lecture on the same kinds of things, year after year, without having to work up new material as his lectures were usually accompanied by slides and photographs that demonstrated, from his own work, the principles being discussed. The question-and-answer sessions were less formal, but he still brought slides and photographs of various projects, and most of the questions asked seemed to be connected to those subjects that Burbank would feel he was most qualified to address.

[227] Burbank, quoted in Jordan, "Some Experiments," 204. Emphasis in original.

Late in life Burbank would not look back fondly on these educational moments. After saying that many of his friends had "led me astray and it has cost me a lot of money, a world of trouble, and a multitude of worries before I got back on the main track again." He wrote

> I had delivered a lecture or two and written constantly of my own specialty; a group of friends suggested that I should give up my actual experiments and go to teaching my methods to others at one of the big universities. In spite of the fact that I was definitely opposed to this project from the first, I was approached by several educators and finally I did give a series of lectures as part of the regular course at Stanford University. But I steadfastly refused to turn teacher; what I needed was to be free to attend to my experiments.[228]

One wonders what Jordan thought of this characterization that was both ungracious and completely ungrateful. In any case, there is no clear reason when or why the lectures came to an end, but come to an end they did. Perhaps Jordan came to the conclusion that Burbank did not have much to offer the students after all. Or, as seems more likely, Burbank really did not enjoy it and sought an exit from the lectures as quickly as possible.

Whatever the reasons for their end, the lectureship at Stanford served two useful purposes. First, it involved Burbank with an academic institution, and second, it connected him to respected scientists. Without this, Burbank might have had a hard time keeping up with the theories and questions of that academic world, and had little to say to it. But, it also kept those figures close to Burbank as well. Burbank had charisma; those who visited him, or spoke to him in person, rarely came away disappointed. For this reason, by keeping close to Burbank, friends like Jordan and Kellogg would come to Burbank's aid when he was attacked or needed

[228] Burbank and Hall, *Harvest*, 243-44.

guidance, events that would increase as Burbank's fame grew, along with the demands for his opinions and energies.

Kellogg's article in *Popular Science* appeared the following year. In it, Kellogg argued that Burbank's greatest strength lay in the "double process of recognition and selection of desirable variations," declaring him a "master at seeing, and a master at feeling" when determining which plants to preserve and which to destroy.[229] Burbank had also mastered the art of speeding up the process for various plants. Once certain seedlings had been chosen, such as with plums, it would normally take five to seven years before the plant had grown enough to produce fruit—a long time to wait. Burbank, however, had mastered the art of grafting; through this process, he was able to graft the seedling onto an already established plum tree, ensuring that instead of five to seven years, he only had to wait one or two to see what kind of fruit was produced. For other plants, he could take advantage of the long California growing season to accomplish in one year what normally took three.[230] Finally, Kellogg also praised Burbank for the wide scope of his projects, and his willingness to try anything with any plant to see what might happen: "nothing is too bold for him to attempt, the chances of failure are never too great to frighten him."[231] Kellogg believed these were the three greatest strengths of Burbank: his own innate sense of selection, his ability to work well and fast, and the enormous scope of his various enterprises.

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[229] Vernon L. Kellogg, "Scientific Aspects of Luther Burbank's Work," *Popular Science Monthly* 69 (1906): 365.
[230] Kellogg, "Scientific Aspects," 366.
[231] Kellogg, "Scientific Aspects," 367.

Kellogg closed out the article in similar fashion to Jordan, using illustrations to provide concrete examples of the benefits Burbank had discovered through his various crossings. Here was the stoneless plum, much larger than both of its "parents."[232] Here was a young chestnut tree, full of nuts at an age when it should have still been bare.[233] Just as with Jordan's article, these types of essays served to establish for a broad audience the important work that Burbank was doing, and left the reader to wonder just what else Burbank might accomplish if given enough peace, time, and space.

Not all the press Burbank received was glowing praise, though, as even an old friend seemed to have second thoughts. Wickson wrote a fourth article for *Sunset Magazine* published after Jordan's article that sought to set the record straight. Wickson was not necessarily trying to counter anything that Jordan had written, but to challenge the way the popular press might report on and continue the discussions of Burbank. Wickson began his article by directly challenging the scientific quality of Burbank's work, stating that he "has never had a day's scientific training, who has never employed the generally accepted methods and accessories of scientific investigation, nor made notes of his materials, processes and results." Wickson even referenced a conversation with de Vries, in which de Vries remarked that while Burbank might use the scientific terminology then in vogue for the time (in regard to evolution, natural selection, and mutation), he did not appear to really know what the terms meant within the scientific community and used them "with an entirely different meaning."[234] Despite all this, though, Wickson

[232] Kellogg, "Scientific Aspects," 369.
[233] Kellogg, "Scientific Aspects," 370.
[234] Edward Wickson, "The Real Luther Burbank," *Sunset Magazine* 15 (1905): 3.

seemed more embarrassed by the more outrageous attention lavished on Burbank, as if he was the epitome of all that could be called science. He still considered Burbank to be “a man of exceptional character, merit and power,” but he wanted to set the record straight.[235]

Wickson explained that the lack of scientific record keeping was a normal result of Burbank’s work. Since he was dealing with thousands upon thousands of plants, most of which would turn out to be failures (and soon destroyed), the keeping of detailed, meticulous records would only slow the work down to an immeasurable crawl. Yet the vast scope and speed with which Burbank was able to work was to his advantage;[236] this was acceptable, it just should not be called science. The importance lay not in any particular method employed by Burbank; on the contrary, Wickson argued that it was “in the man that the power resides.”[237] There was something special about Burbank, as he displayed a unique gift capable of determining which plant, among a thousand, would be useful and which ones would not. Others might try to replicate Burbank’s experiments, but unless they had this gift, they would fail. Wickson did not call Burbank a genius, but attributed his success to hard work and his uncanny ability to judge the plants as they developed and grew.[238]

Burbank presented a simple approach to biology, but it was one that had “been of inestimable value in the progress of his work.” Burbank had absorbed enough of Darwin, Wickson argued, to understand that things could evolve, and

[235] Wickson, “Real,” 4.
[236] Wickson, “Real,” 7.
[237] Wickson, “Real,” 8.
[238] Wickson, “Real,” 11.

this encouraged him to seek to cause changes himself. This gave him the incentive to try, and even to fail, in order to bring about what he wanted.[239] While this seems to give Burbank some scientific credit, it is not much; at best, Wickson stated that Burbank has the most basic understanding of the science involved. However, Wickson was trying to say that Burbank only needed a small amount of understanding to successfully complete the work he was doing – he did not need the more in-depth understanding that a "real" scientist would need. The amount of understanding that he had was without a doubt adequate for his tasks at hand. He was more of "an artist, rather than . . . a scientist or philosopher."[240] Wickson went on to chronicle a list of the same kinds of achievements that other authors had pointed out. But in his final analysis, Wickson declared:

> As to the general character of his work, it may be said that he has disclosed material of incalculable value to science, but has currently swept it from his pathway for the reason already discussed. . . . For horticulture he has not only produced a wealth of new material and methods, but has accomplished more than any other man ever did in the elevation of horticulture toward a lofty plane of biology. He is however a horticulturist, and not a scientist or a philosopher, and they who are attempting to drag him into these fields are not wise.[241]

In the final analysis, then, Wickson praised Burbank for his accomplishments, but could not elevate Burbank's work into the realm of actual science.

It is interesting that at the end of an article that sought to set the record straight and move Burbank down slightly in the realm of science, *Sunset* published a poem about Burbank that is worth quoting in full:

> "Lord of the Earth, give us a sign,
> Turn thy Heart's fuitage to our ken,
> Let us behold the hidden wine

[239] Wickson, "Real," 10.
[240] Wickson, "Real," 11.
[241] Wickson, "Real," 16.

Hitherto hid from eyes of men."
Called thus the worldlings to their God,
And straightway there arose a man,
Born to interpret soil and sod,
Burning with love for God's own plan.
Far and profound his calm eye saw
The beauties hid in frond and seed.
His hand brought life, the newer law.
His hand transformed the dream to deed,
The balked bud was forever freed.[242]

Perhaps Burbank did not mind this slightly critical article with this poem at the end. Who would not want to trade being a lowly scientist for being the agent of God's will on earth?

In a fifth article a few years later, Wickson had softened a bit more toward Burbank. He argued that it was still too soon to decide if what Burbank did could be considered "botany" or if it should be classified as "horticulture," the difference being between a scientific term and an industrial one. Only time, and more evaluation, could tell for sure.[243] The years between Wickson's articles had been prosperous ones for Burbank: he had a much finer house now full of nicer furnishings thanks to his increased profits. Despite these new comforts, Burbank was still the same hard worker he had been in the past.[244]

Wickson also praised Burbank because "every thought of his is charged with philanthropy, the furnishing of greater beauty or richer sustenance at lower cost to the human race" even as these creations brought fame and fortune into his house.[245] But that did not lessen Burbank's achievements; this was a new age,

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[242] Charles J. Woodbury, "Luther Burbank," *Sunset Magazine* 15 (1905): 16.
[243] Edward Wickson, "Luther Burbank and His New Environment," *Sunset Magazine* 21 (1908): 151.
[244] Wickson, "New Environment," 152-54.
[245] Wickson, "New Environment," 159.

after all, when men did not have to choose between philanthropy and profit.[246] Other leaders of American businesses – like John Rockefeller, Andrew Carnegie, and J. P. Morgan – might become philanthropists long after making their fortunes, but Burbank's work was philanthropic in its very conception and nature.

Wickson hoped that, sometime soon, Burbank's work might be more carefully and scientifically studied, the sensationalism and gawkers and promoters removed, and Burbank left in peace to accomplish his work. In a final note, Wickson thought that someone should establish a school to draw the brightest and best to California to study under Burbank so that, when Burbank was gone, his important work would continue.[247]

A possible solution to Wickson's concern had been addressed, perhaps, just a few years before. In 1902, Andrew Carnegie had donated $10 million to establish the Carnegie Institution. Among the purposes of the organizers were the goals "to encourage, in the broadest and most liberal manner, investigation, research, and discover, and the application of knowledge to the improvement of mankind;" "to conduct, endow, and assist investigation in any department of science, literature, or art, and to this end to cooperate with governments, universities, colleges, technical schools, learned societies, and individuals;"[248] "to appoint committees of experts to direct special lines of research;" and "to publish and distribute documents." All of these could be connected to Burbank and his work.

In 1904, Burbank received word that he had been awarded a very prestigious recognition – the Carnegie Institution had granted him a stipend and

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[246] Wickson, "New Environment," 161.
[247] Wickson, "New Environment," 162.
[248] *Carnegie Institution of Washington Yearbook* 3: 9.

scientific acclaim in what was originally to be a ten-year partnership. For years, people such as Wickson, Jordan, Kellogg, and others had bemoaned the fact that there was no official record of Burbank's methods and work, at least not in a manner that scientists would have accepted. This Carnegie grant seemed to provide a chance to change all that, as part of the goal was to publish a thorough account of Burbank's methods and practices. Burbank welcomed this grant for two main reasons. First, the financial support could give Burbank the freedom to pursue other experimental activities without having to keep the business side of things his primary goal. Second, it would give Burbank the published recognition from the scientific community that he sought. To accomplish this aspect, the leaders of the Institution chose George Shull to be the liaison with Burbank – questioning, recording, and investigating his work in order to publish his findings for scientists around the world.[249]

In many ways, Shull was an excellent choice; he studied under the biologist and geneticist Charles Davenport at the University of Chicago, from which he graduated in 1904 with his Ph.D. He was immediately hired at the Station for Experimental Evolution of the Division of Biology of the Carnegie Institution.[250] Over the next few years, Shull spent months in Santa Rosa with Burbank discussing his work and trying to collect evidence that Shull could consider scientific enough to merit publication. This, however, would become a growing source of tension between Burbank and the Institution. Burbank desired the almost

[249] This relationship is discussed in Bentley Glass, "The Strange Encounter of Luther Burbank and George Harrison Shull," *Proceedings of the American Philosophical Society* 124 (April 1980): 133-144.
[250] Ibid., 136.

immediate publication of his methods and experiments; Shull and the Institution needed to test and verify Burbank's findings – as any University-trained scientist would do. When the Institution did not rush to publish, Burbank became connected in 1907 with another publishing company, the Cree Publishing Company, to create popular books that detailed his experiments.[251] This created immediate tension with the Institution, as they desired to know what would be in the books, and if they would compete with what they hoped to print themselves. It also did not help that Cree hyped the books in ways that presented Burbank as more of a miracle-worker than a scientist, bringing both Burbank and the Institution into disrepute.

It was this, more than anything else, that ended the relationship between Burbank and the Institution. The President of the Institution, Robert Woodward, wrote to Burbank, "I deem it imperative to state that a halt must be called upon all these operations if your connection with the Institution is to continue."[252] Burbank was himself embarrassed by Cree, but did not mince words about the Institution as well.

> Personally, I have no interest whatever in the publication of these books [by Cree], or in the Carnegie fund. As you know, the avowed proposition of the Trustees of the Carnegie Institution was to 'Capture Burbank for the benefit of science,' and the fund was accepted, not for my personal benefit in any way whatever, but instead as a drawback to my own personal comfort and happiness, feeling only that it could greatly extend the value of this great and unique work for the human race, and as greatly to extend the fund of biological knowledge.[253]

[251] Ibid., 139-141.
[252] Robert S. Woodward, Washington D.C., to Luther Burbank, Santa Rosa, California, LS 4 August 1908, LBP-LOC.
[253] Luther Burbank, Santa Rosa, California, to Robert S. Woodward, Washington, D.C., LS 15 August 1908, LBP-LOC. Emphasis in original.

Burbank was ready to wash his hands of all of these affairs. The Institution dropped its sponsorship of Burbank, although Shull continued to visit Burbank for the next couple of years to continue to work on his notes in the hopes of being able to publish a scientific version of Burbank's work.

Cree proved not up to the task, though, and supporters created a new organization in 1912, the Luther Burbank Society, to solicit memberships to fund the publication of these books. Originally to be ten volumes, this was later expanded to twelve books by subscription: for $181, a Lifetime Member was guaranteed to receive these special edition books. Davenport and Shull both purchased memberships; when Shull received the proofs for the first volume, he found that much of the material was the same as what he had been working on.[254] Since much of the material had come direct from Burbank, it appears that he gave the same information to everyone. Shull's work was never officially published, and remained uncompleted. Despite the optimism of the initial grant, the disintegration of this relationship left feelings of anger and bitterness on both sides, and embroiled Burbank in controversies that would last over a decade.

There are hints that Burbank also had a brief encounter with politics (of a sort). New President Woodrow Wilson appears to have considered naming Burbank the Secretary of Agriculture. Jordan was quick to respond, writing

> We all realize how you would honor such a position, but we must realize also that the kind of work and the kind of quarrels which go on in Washington would drive you, or any other men devoted to investigation, wild, and it would be a very wasteful way of utilizing your valuable services. There are so many good things which you are doing and will do that I hope

[254] Bentley, "Strange Encounter," 142.

> you will show those who are trying to show you the door of politics, the side of the house where the toboggan lies.[255]

Whatever Jordan's fears, there is no evidence that Burbank was ever offered the position, or any position, in a government agency like the Department of Agriculture at any point during his career.

Burbank had another interesting encounter with academics in 1918. Charles Willoughby, the Director of the Peabody Museum of Archaeology and Ethnology at Harvard University saw "an exhibition illustrating the development of maize from a native wild grass of the tropics." After discovering where the exhibits had been made, he wrote to Burbank in the hope that he had other samples of this development that could be donated to the museum.[256] Burbank was able to provide some samples that showed the process of development of maize from a wild grass to corn, donating them to the museum.[257] His donation was officially recognized by the "President and Fellows of Harvard College," who thanked him for his donation of "fifty-six specimens illustrating the development of maize by the American Indians of Mexico and Central America; and that further they desire herewith to record their high appreciation of his generous thought of Harvard University.[258]

Burbank was probably surprised – and a little annoyed – when he received a follow-up letter from Willoughby in December. Botanists at Harvard had objected that his work "was obtained by hybrids between maize and Teosinte, and not a

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[255] David Starr Jordan, Stanford University, California, to Luther Burbank, Santa Rosa, California, LS 20 February 1913, LBP-LOC.
[256] C. C. Willoughby, Cambridge, Massachusetts, to Luther Burbank, Santa Rosa, California, LS 28 June 1918, LBP-LOC.
[257] Luther Burbank, Santa Rosa, California, to C. C. Willoughby, Cambridge, Massachusetts, LS 5 July 1918, LBP-LOC.
[258] Roger Pierce, Secretary, Boston, Massachusetts, to Luther Burbank, Santa Rosa, California, LS 3 August 1918, LBP-LOC.

distinct development from Teosinte alone."[259] Willoughby believed and was displaying the samples as if they were the latter; the former would be unimpressive and not worthy of display.

Burbank's response is worth quoting in full.

> You probably know as well as I do that some specialists are a few years ahead of the average scientist. I have been well acquainted with Teosinte for about forty-five years having raised it in the Eastern States as well as here and having made more extensive experiments on corn and Teosinte than any man living so should know a little about the matter myself. Am thoroughly acquainted with the Teosinte hybrids and have made thousands of them. I wished to get the <u>original</u> from the high mountains where it could not have been contaminated with our cultivated corn. This I obtained and after ten or fifteen years got the results which I have sent you.
>
> The botanists who make the claim which you have told me they do may be botanists but they do not know what they are talking about in this case and <u>I do</u>. I have had experience several times with these old theories which have stood for several years unchallenged and as I have watched results more carefully than anybody ever has regarding this Teosinte the matter is settled with me as it should be with everybody.
>
> I would like to ask this question, however, from your botanists. Where did corn come from if not Teosinte?
>
> Just let me know where the original is if not Teosinte.
>
> If you wish for further information I should be greatly pleased to furnish it though my time is priceless.[260]

Willoughby's response to this was to thank him for the clear information, and that he would "suggest to our botanists that they take up the ten year's course you recommend."[261] The whole exchange between Burbank and Willoughby helps to demonstrate that Burbank solidly considered himself to be a scientist – perhaps

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[259] C. C. Willoughby, Cambridge, Massachusetts, to Luther Burbank, Santa Rosa, California, LS 2 December 1918, LBP-LOC.
[260] Luther Burbank, Santa Rosa, California, to C. C. Willoughby, Cambridge, Massachusetts, LS 9 December 1918, LBP-LOC. Emphasis in original.
[261] C. C. Willoughby, Cambridge, Massachusetts, to Luther Burbank, Santa Rosa, California, LS 18 December 1918, LBP-LOC.

even a superior one to those that sat in a lab all day. It also shows that there were many specialists who did not view his work with favorable eyes.

In 1922, though, Burbank was still incredibly popular among the general public. Letters arrived each day with requests for information, seeds, plants, help with programs, or simply a request for an autograph. The growing use of motion picture news clips allowed the public to see Burbank in action, as opposed to simply reading about his exploits in the newspapers. One Fox News filmstrip led an autograph museum director to ask for Burbank's official autograph, to display with Alexander Graham Bell, Thomas Edison, and Guglielmo Marconi. The autograph seeker knew how to properly flatter Burbank: "I know you will be generous enough to do this, for I could see the same kindly look in your face that was in the other great mens [sic] faces."[262] Some time later, Burbank's autograph would be added to this collection, for the enjoyment of anyone visiting central Indiana.

While Burbank may have lost more of his scientific credentials by the 1920s as far as academics were concerned, he had not been completely abandoned. In a letter in 1924, Bertha Parker of the School of Education at the University of Chicago and Dr. Henry Cowles, Professor of Botany at the same university, were preparing an educational science reader for elementary students. They wanted to discuss Burbank's work with the potato, as well as the creation of the Shasta daisy, and Parker wrote to ask permission to include a photo of the Shasta.[263] Burbank complied, and a later letter thanked him for a picture of the Shasta as well as the

[262] Charles O. Edwards, Springport, Indiana, to Luther Burbank, Santa Rosa, California, LS 23 October 1922, LBP-LOC.
[263] Bertha M. Parker, Chicago, Illinois, to Luther Burbank, Santa Rosa, California, LS, 26 June 1924, LBP-LOC.

permission to publish it.[264] Parker would go on to write a children's guide to nature in which she would discuss Burbank in a couple of sections. She described his experiences with potatoes (including the finding of the seed ball), his work with hybrids including the plumcot (in which she called him the "plant wizard"), and his creation of the Shasta daisy. [265] In another book, Parker would mention Burbank's work with thornless cacti and, in a section entitled "See for Yourself," tell readers to "Find out from other books more about the work of Burbank, De Vries, and Mendel."[266] He might not be receiving invitations to speak at national botanical conventions, but Burbank might console himself with the thought that children would continue to be taught his work; and everyone always said he loved the children most of all – a theme more fully explored in the next chapter.

When it came to championing the contested and divisive theory of evolution, Burbank was never shy to weigh in on the scientific and religious debates over evolution. He never held back even in criticizing the ideas of other famous (and, in many ways, more academically approved) scientists, no matter if they were supporters of his work or not. For example, in regard to the debate over mutations raised by de Vries, Burbank felt that de Vries had not performed enough experiments over a wide enough array of plants to support his conclusions. Instead, Burbank viewed mutations simply as another part of normal variation within a plant; given enough time, and freedom, individual plants sometimes broke

[264] Bertha M. Parker, Chicago, Illinois, to Luther Burbank, Santa Rosa, California, LS, 31 July 1924, LBP-LOC.
[265] Bertha Parker, *The Golden Treasury of Natural History* (New York: Simon and Schuster, 1952), 152, 157, 167.
[266] Bertha Parker and Illa Podendorf, *Domesticated Plants: The Basic Science Education Series* (Evanston: Row, Peterson and Company, 1953), 22, 37.

free in radical ways, producing the so-called mutation. Burbank felt like de Vries' mutation theory was "a step backward toward the special creation theory" rather than a progressive, modern answer to these evolutionary questions.[267]

As partial proof of Burbank's argument against de Vries' mutation theory, the article was full of illustrations showing the wide variety to be found in the fruit, stems, and leaves of crossed species. These included dahlias, strawberry-raspberries, blackberry-raspberries, blackberries, apples, quinces, daisies, walnuts, poppies, and plums.[268] These varied greatly in size; for example, some of the plums appeared no bigger than a cherry, while others were as large as giant apples. The walnut leaves varied not just in size but even with the number of leaves on each branch. And the apples were not only different sizes but all different colors as well. All of this was evidence marshaled by Burbank to argue that there were enormous amounts of latent characteristics within every plant. Given time, work, and patience, it would be possible to bring them out.

In similar fashion, Kellogg's article contained some of Burbank's thoughts about the scope and process of evolution. It began by pointing out that Burbank's work was not revolutionary, nor did it add "any new or additional laws of species-change, nor do his observations justify any such formulation." It did, however, provide reinforcement to certain evolutionary positions proposed at the time, especially Lamarckian ideas of acquired characteristics and the importance of the

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[267] Jordan, "Some Experiments," 207. A "special creation theory" was one trumpeted by Louis Agassiz in America, but had fallen into disfavor among scientists by the twentieth century. For a general introduction to this as well as a bibliography, see Peter Bowler and Iwan Rhys Morus, *Making Modern Science: A Historical Survey* (Chicago: University of Chicago Press, 2005): 129-164.
[268] Jordan, "Some Experiments," 202, 205, 210-211, 212,213, 214, 215, 215-16, 218-19, 221-23.

individual, rather than the species, in the process of evolution (all ideas that would eventually be rejected). In regard to acquired characteristics Burbank told Kellogg "acquired characters are inherited or I know nothing about plant life." All it took was time and effort from an intelligent guide to fix a particular trait with a new species (with the "fixing" being the passing along of acquired characteristics).[269]

In his Stanford lectures Burbank discussed such issues as heredity, variation, environment, and life. In one, he proposed that there were "two lines of energy" that determined what something would be; one was heredity and the other environment. But for Burbank, heredity was just the sum total of all previous environments; therefore, the two were intricately linked.[270] In other words, what some scientists might call a plant's genes were, for Burbank, nothing more than thousands of years of environments summarized in the current plant. This idea fit well with Burbank's personal ideas about creating a fixed new species (and also placed him firmly within the Lamarckian camp of evolutionary theory); all it took was time, and a consistent environment, to create a new trait within a plant, thereby eventually changing its heredity.

In the lecture Burbank also pointed out that most people seemed to forget that nature itself primarily used crossings to get the work of natural selection done. In fact, nature had devised countless ways to accomplish this, whether it be insect, animal, or wind that helped bring about cross-pollination. All Burbank was doing, in

[269] Vernon L. Kellogg, "Scientific Aspects of Luther Burbank's Work," *Popular Science Monthly* 69 (1906): 363.
[270] Luther Burbank, "Heredity," 1, LBP-LOC.

effect, was guiding the process along for traits that he deemed most useful, instead of leaving it up to nature.[271]

In addition to his belief in the power of cross-pollination, Burbank also trusted completely in the power of the environment to shape the traits of the plants. He used some of the cacti and desert plants he was experimenting with as an example. While in a dry, hostile climate, they had thorns, few leaves, and an acrid taste. But, in the moister environment of his gardens, they produced few to no thorns, plenty of leaves, and little acidity. By providing a "superabundance of food, sunshine, moisture and freedom from competition," Burbank could shock the plants into physical changes.[272]

In this combination of selection and environment, Burbank believed he had synthesized the two great branches of evolutionary theory, Lamarck and Darwin. According to Burbank, Lamarck had argued for the "direct response of organization to environment and inheritance of useful acquired characteristics," while Darwin had argued for "the working out of useful structures by the influence of selection on small fluctuating variations."[273] He also believed that this synthesis closed the gap between Darwin and Wallace as well, thereby bringing together three of the main streams of evolutionary thought that divided the scientific minds of the day. Burbank had not arrived at these ideas, though, through pure theory, studying books, or in a small lab; he had seen them in the workings-out in his large-scale garden experiments. He would leave it up to the students to see if he was right or not.

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[271] Burbank, "Heredity," 2.
[272] Burbank, "Heredity," 2-3.
[273] Burbank, "Heredity," 4.

By late 1924, American society was gearing up for a major clash over the theory of evolution. In a few months, the state of Tennessee's legislature would pass the Butler Act forbidding the teaching of evolution in public schools, and the ACLU would find in John Scopes a teacher willing to challenge that law. Burbank, long a supporter of the theory of evolution, did not back down from his position as the cultural debate intensified. In December 1924, Burbank gave a speech (in a San Francisco church) entitled "Science and Civilization." After discussing religious aspects for a while (which will be examined in a later chapter), he made a personal attack against William Jennings Bryan as well as a defense for the theory of evolution. Bryan was described as "an honored personal friend" of Burbank's, and yet he characterized Bryan as one whose "skull with which nature endowed him visibly approaches the Neanderthal type. Feelings and the use of gesticulations and words are more according to the nature of this type of investigation and reflection."[274] This description of Bryan as a Neanderthal quickly spread throughout newspapers around the country, and the characterization gained in importance as the Scopes Trial began in July 1925. Bryan's strident rejection of evolution and his fundamentalist crusade on the very idea proved, for Burbank, that Bryan was irrational after all.

Burbank concluded his speech with an emotional defense of evolution. "Those who would legislate against the teaching of evolution should also legislate against gravity, electricity, and the unreasonable velocity of light, and also should introduce a clause to prevent the use of the telescope, the microscope, and the

[274] Luther Burbank, "Science and Civilization," speech before the Federated Church, San Francisco, 23 December 1924, typed copy, page 5, LBP-LOC.

spectroscope or any other instrument of precision which may in the future be invented or constructed or used for the discovery of truth."[275] This sentence, humorous presentation aside, was the heart of the matter for Burbank. Evolution was as certain to him as any other part of the sciences, a theory arrived at and proven by a century of careful observation and scientific study. Burbank believed that his own work should have provided the living proof of evolution; a tour of his gardens revealed the power of natural selection guided by the hands of man. For Burbank, no rational person would argue against the idea of gravity, or the usefulness of the microscope in scientific study, and no rational person should reject evolution either.

It was not enough for Burbank to support the theory of evolution; he also strongly believed that he played an active role in the working out of evolution for the benefit of human beings. To return to Wickson and his articles, he began his initial feature by discussing all the new fruits that were being produced in California, including entirely new varieties. The man who brought such new items into the world, Wickson wrote, would "command the admiration of the man of science, the philanthropist, the statesman because they involve new contributions to the sum of human knowledge and are new gifts to the elevation and advancement of mankind." Wickson added that, in the midst of the debate over natural selection and evolution, "no matter how great the results by natural selection hitherto, artificial selection may surpass them all."[276] Burbank, according to Wickson, was a leader in this cutting-edge field of artificial selection. Here was a

[275] Burbank, "Science and Civilization," 5.
[276] Wickson, "Burbank, 1," 57.

scientist essentially noting that while Darwin's natural selection may be blind, a different kind of selection – "artificial" – was possible, and that this was what Burbank was doing.

Burbank's process became more clear in Wickson's second article that dealt with Burbank's specific methods. Wickson wanted to emphasize that there was nothing magical about them at all; Burbank had never claimed to be doing anything that unusual. In fact, Burbank had made his methods of artificial selection clear in a speech in front of the American Pomological Society in 1895 and another one before the Floral Congress of 1901.[277] Burbank used "domestication" as a powerful tool to produce variations in the plants; without the struggle for existence, naturally occurring in the wild, plants would be comfortable enough to allow variations to emerge.[278] So, Burbank ensured they had sufficient light, food, water, and protection. Ironically, Burbank called this creating "disturbance" for the plants. Burbank then used the method of cross-pollination to produce changes within the plants; there were no limits to which plant's pollen he might use to fertilize another plant.[279] The seeds produced through this cross-pollination were planted, and the resulting sprouts were studied for certain characteristics that could be further enhanced and exploited.[280] This was vastly different from what most Darwinists argued happened with evolution. Burbank would respond by pointing out that "survival of the fittest" could drive evolution in the wild, but guided (or artificial, or manual) selection did not require it.

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[277] Edward Wickson, "Luther Burbank: The Man, His Methods and His Achievements; Part 2" *Sunset Magazine* 8 (1901-02): 145-46.
[278] Wickson, "Burbank, 2," 148.
[279] Wickson, "Burbank, 2," 152.
[280] Wickson, "Burbank, 2," 153-54.

As a part of his Stanford lectures Burbank also donated a hundred of his "first generation walnut trees. . . . All are from seedlings of the same parent and yet all are different." They were planted in Stanford's arboretum and named, by Jordan, the "Evolution Forest."[281] The point of the donation was to emphasize to students the numerous varieties produced through Burbank's crosses, just as Jordan had previously written about in his article for *Popular Science*. That morning they collected a sampling from some of the trees that, even though siblings, were each unique in their leaf structures. In a poignant way Burbank could make his arguments about the power of his methods in guiding evolution with illustrations that were seemingly irrefutable.

Burbank had survived the triumph and tumult of the previous years. It had been a period of disparate fortunes. The heavily reported on meeting with Edison and Ford discussed in the first chapter suggested that Americans – and people throughout the world – continued to consider Burbank as one of the most significant scientists of the time. On the other hand, the dissolution of Burbank's connection with the Carnegie Institution, combined with the utter failure of the Luther Burbank Society and Press, seemed to imply that Burbank's reputation was not all it appeared to be. A different personality might have decided to retire from the public realm, and live out one's remaining years in the ease – and financial security – that his plant creations had brought him. Burbank did not have that kind of personality. Secure in the belief that he was a scientist, and had enough knowledge and expertise to speak about a great many issues, Burbank remained

[281] Luther Burbank, interview with David Starr Jordan and unnamed students, Stanford University, 3 October 1905, page 5, LBP-LOC.

in the public view by continuing to voice his thoughts and give his opinions to anyone who asked. There was no way, however, that Burbank could have imagined the storm of controversy brewing over evolution; the storm that would assail Burbank throughout the final years of his life.

As he often did, Burbank responded in late 1922 with delight to a journalist's request for a contribution. This time, it was to provide a resolution for America's upcoming new year. The statement starts off innocently enough: "To work more and talk less. To have more faith in ourselves and less in what the other fellow has to say. To think ourselves and not to let our thoughts be only a readjustment of old prejudices. To look for light and knowledge wherever found without regard to sources."[282]

This is consistent with Burbank's usual kinds of messages in response to requests for these kinds of articles. Frequently he was asked to contribute a "Christmas message" to the world, which was then printed in various newspapers. His message from 1917, just after the entrance of the United States into the First World War, reflected both hope and prayers for safety:

> For thousands of years, Christmas, even under other names, has been celebrated at the time when the days no longer shorten, but begin to lengthen into a new season, a new year with promise of swelling buds, sunny days, and harvests again to cheer and comfort all.
> On this Christmas millions of strong young men are called upon in this and other far off lands, to protect the rights of all the world to live and to enjoy the fruits of peaceful, productive labor.
> We who must stay at home have a heavy responsibility also—to help with all our hearts these who are now our strong young protectors. May we prove that we fully appreciate the great, the tremendous sacrifices these sturdy young men are giving for ourselves, for freedom, and for humanity.[283]

His message from 1920 reflected some of the pain and suffering of the early post-war years, declaring life to be "a precious gift or a legacy of sorrow," and that the true value of Christmas "is not in presents and celebrations, but in a generous,

[282] Luther Burbank, 1922, LBP-LOC.
[283] Luther Burbank, Christmas Message, 25 December 1917, LBP-LOC.

happy spirit of the season, which, if continued throughout the year, would help to make the old world a new one and a far better place to live in." The concluding paragraph emphasized that it "is well to know the happy spirit of the holidays, but better yet to cultivate it all the year. Life is a dull and brutish thing if we think only of our selfish ends without regard to others." [284]

The ending of Burbank's New Year's resolution for 1922 stands in stark contrast to his Christmas message from the same year or any other year. Gone were what some might have called cliché statements about independent thinking and seeking truth. In its place is a jarring finish, for the very next sentences – without paragraph break or punctuation besides a very normal period – reads thus: "If a race has not acquired and stored among its hereditary tendencies sufficient perseverance and adaptability to meet all the changes to which it must always be subjected by its ever-changing environment, it will be left behind and finally destroyed, outstripped by races better equipped for the fray."[285] Thus ends the resolution.

This stands in stark contrast to his annual Christmas message which would be released at around the same time as the resolutions.

> Once more in the long swing of the cosmic pendulum the days begin to lengthen with the sure promise of a coming Spring with its quickened throbbings of a new cycle of Life on the Northern half of our planet home. Christmas really commenced in the long dark past by a joyous celebration of this annual event and the early followers of the Beloved Teacher adopted the beautiful custom from the Pagans, but with a new meaning, which gave it a new life. The new Christmas spirit is one of hope, joy, peace, love, co-operation and good will. In these times of world strife it comes as sunshine to melt the shadows for a time. Why not cultivate the true Christmas spirit all

[284] Luther Burbank, Christmas Message, 25 December 1920, LBP-LOC.
[285] Luther Burbank, 1922, LBP-LOC.

> the year? It would yield health, comfort and happiness to us all as we pass along the way.[286]

How does one move from a message of "hope, joy, peace, love, co-operation and good will," or "happy spirit of the season," to a race being "left behind and finally destroyed"?

The lack of consistency reveals some of the tensions in Burbank's mind connected to his commitment to Eugenics. This "science," emerging from the ideas of Francis Galton in the nineteenth century, had blossomed in the early decades of the twentieth century into a powerful reform movement. Eugenics leaders sought to control human reproduction through state and national laws to either incarcerate those deemed unfit, or to sterilize them against their will, or both. Intelligence tests were developed to weed out those deemed inferior, and programs encouraged the "right" sort of people to have more children than they might otherwise have had. The goal was to produce a perfect American race.[287]

So as one might guess there was a massive emphasis on the proper raising of children. State fairs began adding "Better Baby" contests by 1914, and many had added "Fitter Family" contests by the 1930s, as two ways to encourage the "right" sorts of people to have more children.[288] Usually, these contests were just part of a much larger program of maternal and infant health. The state of Indiana even wrote an "Indiana Child Creed" as the theory behind these programs.

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[286] Luther Burbank, Christmas Message, 25 December 1922, LBP-LOC.
[287] For excellent surveys of the Eugenics movement, see Daniel J. Kevles, *In the Name of Eugenics: Genetics and the Uses of Human Heredity* (Berkeley: University of California Press, 1985; Philippa Levine, *Eugenics: A Very Short Introduction* (New York: Oxford University Press, 2017; and Diane B. Paul, *Controlling Human Heredity: 1865 to the Present* (New York: Humanity Books, 1995.
[288] Levine, *Eugenics*, 51.

> Every child has the inalienable right to be born free from disease, free from deformity and with pure blood in its veins and arteries.
>
> Every child has the inalienable right to be loved; to have its individuality respected; to be trained wisely in mind, body, and soul; to be protected from disease, from evil influences and evil persons; and to have a fair chance. In a word, to be brought up in the fear and admonition of the Lord.
>
> The state is delinquent which does not ceaselessly strive to secure these inalienable rights to its children.[289]

The fairs slowly lost support under the almost constant criticism of male pediatricians, but the end came only when a Democratic New Deal Governor was elected in 1932 who decided to put an end to many of his Republican predecessor's favorite projects.[290]

Burbank was known for his love of children as well. A speech at a banquet in Santa Rosa in 1905 entitled "Our Flowers—the Children" was frequently republished and referred to by various publications. In it, Burbank compared how both flowers and children are similar in that they are individually oriented in their needs – "we are obliged to somewhat adapt ourselves to them." He raises some questions about the quality of the school programs that are educating the children, doubting that a single kind of education could do anything other than to produce "a uniform product of nervous wrecks and a painful lack of the power to grasp, digest and assimilate and make use of the facts of life which always surround them and to which they must learn to adapt themselves and to make the best use of."[291]

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[289] Quoted in Alexandra Minna Stern, "Making Better Babies: Public Health and Race Betterment in Indiana, 1920-1935," *American Journal of Public Health* 92 (May 2002): 744.
[290] Stern, "Making Better Babies": 749.
[291] Luther Burbank, "Our Flowers—the Children", 1 Nov 1905, LBP-LOC.

Whatever program was to be used, it should be one that can "make them as joyous, bright and happy as possible. Teach them by example that it is safe to trust you always, everywhere and on all occasions." He argued that the best kind of education should take place outside, as "the country is always the best place for growing children." But what would this outdoor education mean for girls? "The training of boys and girls should in all the essentials be the same. Out door exercise does not make a girl any less sweet, gentle or tender while it does give physical integrity, sound health, beauty and happy serene nerves."[292] It was perhaps this component of the speech that was most memorable, as it tended to be the headline used in some of the newspaper reports of the speech. For example, two newspapers used four headlines for the article of what one could suppose was of decreasing shock value: "GIVE LASSIES FREEDOM – Burbank Declares Against Keeping Girls Housed Up – SHOULD BE TRAINED LIKE BOYS – Eminent California Horticulturist Asserts That the Country is the Best Place for Growing Children. Compares Little Ones to Posies In Development."[293]

The favorable comments that Burbank received from this short speech encouraged him to continue working on these themes in a much larger piece that would become the document that he was most famous for: *The Training of the Human Plant*. Before examining this document, though, and Burbank's relation to other important Eugenic themes, it is noteworthy to mention an early lecture of Burbank's that he made at Stanford. This lecture had nothing to do with plants or scientific theories; instead, it appears to be a speech one would make to a group of

[292] Luther Burbank, "Our Flowers—the Children", 1 Nov 1905, LBP-LOC.
[293] *The Daily Star* (Fredericksburg, Virginia), 05 January 1906, 4. *Fort Smith Times* (Fort Smith, Arkansas), 20 November 1905, 2.

new freshmen – a welcome-to-college kind of speech. Burbank began by stating that there were three kinds of crafts on the sea. The first was composed of rafts, scows, and barges that could not move without help, but were pushed or pulled from place to place. The second group were those that were powered by wind—sailboats. Once again, though, they were dependent on favorable winds, and found difficulty going the exact direction they wanted. The third class, though, was the steamship, capable of going whatever direction it wanted, no matter the wind or current. While there might be human beings who seemed to fit into each of these categories according to their behavior, Burbank argued that, in actuality, every human was like a steamship. The difference came in education; education provided the guidance for the energy of the mind. "Education gives no one any new force. It can only discipline nature's energies to develop in natural and useful directions so that the voyage of life may be a useful and happy one."[294]

Education set people apart and helped them to reach their full potential. It was "for the improvement of character. It helps us to know that when guided by it we are rulers of our one universe—the master of fate—without it we are a slave of slaves." He still took the opportunity, in the midst of praising education, to work in a little of his botanical thoughts. "Principles not events count. It should cultivate character which is the sum of both heredity and environments and individuality which gives one the ability to plough through adverse winds and waves in a bee line toward truth and its application to daily life."[295] Once again, it is important to point out the absence of any reference to God, or Christian morality; this was

[294] Luther Burbank, unnamed lecture, 1, LBP-LOC.
[295] Burbank, unnamed lecture, 2.

Burbank's moral philosophy, cut free from more traditional expressions of Christian ideas.

It also might seem odd to begin a discussion of Burbank's eugenic ideas with a lecture on education, but the idea of education was a crucial part of Burbank's first foray into the general public's realm with the initial publication of his book, *The Training of the Human Plant*, in 1906. He had perhaps been inspired the previous year when asked a question by someone at *American Illustrated Magazine* about a quote from Dr. Thomas John Barnado, a reformer who established children's homes in Great Britain. Barnado argued that "more could be done with children than with plants," and the editor wanted to know what Burbank had to say about that.[296] Burbank responded with a resounding yes, that "much more can be accomplished in the improvement of children than with plants," a response that might seem unexpected given Burbank's chosen occupation. He closed his statement discussing aspects of heredity and environment, and if there was any importance in this for the future. "Does this mean anything to the race? Does it not mean everything?"[297] This appears to be the impetus for his work on *The Human Plant*. Printed in small numbers at first, interest would grow so that it was reprinted numerous times and became an often-read and much discussed book. This work combined two of Burbank's great interests: eugenic theory and the education of children (two interests that were intricately joined in Burbank's mind).

[296] Editor, *American Illustrated Magazine*, to Luther Burbank, Santa Rosa, California, 2 August 1905, LBP-LOC.
[297] Luther Burbank, Santa Rosa, California, to *American Illustrated Magazine*, LBP-LOC.

He even dedicated the book “to the sixteen million public school children of America and to the untold millions under other skies.”[298]

There is much about the early pages of this work that might make the usual supporter of eugenics worried, as Burbank did not seem to be concerned about any mixing of the races. He outlined, for instance, the broad geographical and political categories in which the 752,864 immigrants to the United States in 1904 fell, and boldly stated that here was “the grandest opportunity ever presented of developing the finest race the world has ever known out of the vast mingling of races brought here by immigration.”[299] While some were worried about the mixing of the blood-lines, Burbank touted the positive results that could ensue. Just as when with plants he had crossed “an absolutely wild strain with one that, long over-civilized, has largely lost virility,” and produced “a plant which is likely to be stronger and better than any ancestor,” so too “may we hope for a far stronger and better race if right principles are followed, a magnificent race, far superior to any preceding it.”[300] On the surface, at least, there was little hint of a fear of miscegenation that worried so many others in the eugenic movement and across America.

The problems came, according to Burbank, when people expected something different from what one might see in nature. The United States was “more crossed than any other nation in the history of the world,” and so one saw the same as could be seen in Burbank’s gardens: “all the worst as well as all the

[298] Luther Burbank, *The Training of the Human Plant* (New York: The Century Co., 1907): ii.
[299] Burbank, *Human Plant*, 5.
[300] Burbank, *Human Plant*, 9.

best qualities of each are brought out in their fullest intensities."[301] This was what normally happened in crossings, but it was also why Burbank believed a steady, rational, guiding hand was necessary. While discussing plants, Burbank would state that in "a rigid selection of the best and as rigid an exclusion of the poorest, rests the hope of all progress. The mere crossing of species, unaccompanied by selection, wise supervision, intelligent care, and the utmost patience, is not likely to result in marked good, and may result in vast harm. Unorganized effort is most vicious in its tendencies."[302] The danger for humanity came when people were careless with their own decisions for so-called crossings.

From Burbank's perspective, the great crossing of the races that had taken place in America had produced all the varieties that were needed. This might alleviate some of the worries about racial mixing. "When all the necessary crossing has been done, then comes the work of elimination, the work of refining, until we shall get an ultimate product that should be the finest race every known. The best characteristics of the many peoples that make up this nation will show in the composite: the finished product will be the race of the future."[303] But what did Burbank mean by this "elimination" and "refining?" Anyone who had read the articles of Wickson, Kellogg, or Jordan knew what happened to the plants that Burbank rejected – they were destroyed in giant bonfires. Was Burbank advocating violence, or racial purging, such as might be seen decades later in Nazi Germany? Or something more benign?

[301] Burbank, *Human Plant*, 11.
[302] Burbank, *Human Plant*, 3.
[303] Burbank, *Human Plant*, 11-12.

Burbank did believe that there must be some kind of "separation of the best from the poorest."[304] He was not advocating a distinction between the rich and the poor necessarily, but a distinction between the "best" people and the "worst." Some of that might work itself out along class lines, but not entirely. This is where Burbank's interest in children and their education first becomes apparent. Just as he believed environment played a key role for his plants, Burbank was convinced that a child's environment played an essential role in the kind of person that would emerge; even when compared with plants and other animals, "of all living things the child is the most sensitive. . . . A child absorbs environment."[305]

Burbank argued that if one wanted better children, one had to begin very early, and they first needed a good environment; however, this was not really to be found in school. "No boy or girl should see the inside of a school-house until at least ten years old."[306] Perhaps Burbank was remembering his own miserable experiences in school, the terror of reciting in front of the class, the distaste for being shut indoors. Burbank almost seemed to scoff at those who might be worried that such a delay in formal education would put the child too far behind to catch up. Instead, from Burbank's perspective, this freedom outside the school-house would make the child better prepared for school; there would be little delay, as "the properly prepared child will make such progress that the difference in graduation is not likely to be noticeable." Even if there was a delay it was likely not to be more

[304] Burbank, *Human Plant*, 13.
[305] Burbank, *Human Plant*, 14.
[306] Burbank, *Human Plant*, 16.

than a year or two, and Burbank did not see that as being a negative either. “Do we expect a normal plant to being bearing fruit a few weeks after it is born?”[307]

Burbank did recognize, though, that this would work best for those that lived in the country, or a small town. For those unfortunate enough to live in a city, and a move to the country was not possible, school was for the best. The city was a place where “the temptations are so great, the life so artificial, the atmosphere so like that of the hot-house, that the child must be placed in school earlier as a matter of safeguarding.”[308] Even here, though, there was a dire note of warning when Burbank made another allusion to his work with plants. The point was to produce healthy children. “I do not work with diseased plants. They do not cure themselves of disease. They only spread disease among their fellows and die before their time.”[309] If people wanted healthy children, the solution, for Burbank, was to move to the country and keep them out of school for a while. Otherwise, the environment of the city (and of school itself for the very young) could produce a diseased child that had little hope of becoming healthy.

So what should be done for the first ten years? First, people needed to recognize that every child was different. Parents, teachers, and reformers “cannot expect them to develop alike. They are different in temperament, in tastes, in disposition, in capabilities.”[310] Trying to force everyone through the same educational system merely disturbed the child, and continued the process of “breaking down the nervous system of the children of the United States.”[311] Not

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[307] Burbank, *Human Plant*, 17.
[308] Burbank, *Human Plant*, 16.
[309] Burbank, *Human Plant*, 17-18.
[310] Burbank, *Human Plant*, 19.
[311] Burbank, *Human Plant*, 20.

every child would be good at math, or speech, or reading, just as one would not expect to find apples on a banana tree or figs on a thistle. One might expect the botanical impossibility from Burbank, but should not expect it from children.[312]

After arguing for the uniqueness of each child, Burbank went on to list three essential physical components of a child's environment. The first need was sunshine. Physical sunshine brought happiness and was directly tied, of course, to the outdoors that Burbank loved. But there was metaphorical sunshine as well, in making sure that children were well-clothed (not costly garments, but practical ones) and treated with kindness and respect.[313] Children also needed fresh air, both in a literal sense and in a metaphorical; they had to be surrounded by an atmosphere "free from every kind of indelicacy or coarseness. The most dangerous man in the community is the one who would pollute the stream of a child's life"[314] Finally, the child needed "nourishing food." Unlike other reformers at the time such as John Harvey Kellogg, Burbank rejected the idea of healthy vegetarians.

> I once lived near a class of people who, from religious belief, excluded all meat, eggs, and milk from the dietary of their children. They fed them vegetables and the products of cereals. What result followed? The children were anemic, unable to withstand disease, quickly succumbed to illness. There were no signs of vigor; they were always low in vitality. But that was not all. They were frightfully depraved. They were not properly fed; their ration was unbalanced. Nature rebelled; for she had not sufficient material to prefect her higher development.[315]

The proper diet was one that blended meat (including fish and eggs) with fruit and vegetables. This was what nature taught humanity, according to Burbank; unless

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[312] Burbank, *Human Plant*, 21.
[313] Burbank, *Human Plant*, 31-33.
[314] Burbank, *Human Plant*, 34-35.
[315] Burbank, *Human Plant*, 36-37.

one wanted shattered or stunted children, incapable of functioning in the future as rational, healthy adults, one must listen to nature.

Burbank believed that the environment was so essential to the proper formation of children that he saw this as a national problem requiring a national solution. Those parents who could not provide the proper environment for their children must have some kind of "wise, sane, consistent state aid. . . . The nation, or the commonwealth, should take care of the unfortunate. . . . Only through the nation, or State, can this work be done. It must be done for self-protection."[316] If the nation continued to do nothing, then all the children growing up in the hostile poverty of the cities would run rampant and, when they came of age, "crime would go unpunished, all evil would thrive, the nation would be destroyed."[317] The nation had to begin a program of immediate aid or it would be too late.

While the "normal" child could be surrounded with all these good things – sunshine, food, honesty, love – and therefore would have these desired traits inscribed within their nature over time, what could be done about the "abnormal?" Burbank now turned his attention to them. Here Burbank had an opportunity to side with those who, like the Nazis later, would advocate for outright elimination. He pointed out that in the past, places like Sparta had done just that with their abnormal children; Burbank, though, soundly rejected this. Even though he selected and destroyed thousands and thousands of unworthy plants on a regular basis, he still admitted that many of his inventions sprang from plants that, at first, might have been deemed abnormal. So too might it be with people: what appeared

[316] Burbank, *Human Plant*, 44.
[317] Burbank, *Human Plant*, 46.

abnormal might, under the right environmental stimuli, become normal or above normal.[318] This also applied to those whom society might deem physically weak. He argued from history – look to the great leaders, philosophers, thinkers, and scientists of the past. Many of them were physically weak.[319] Undoubtedly, Burbank intended to include himself in that distinguished list (without having to name himself), as he had struggled with frequent bouts of illness and a few close brushes with death. Though he was known for being a hard worker, it was never claimed that he was always in the best of health. So Burbank was willing to give those labeled "abnormal" a chance, with the right environment, to improve themselves.

Then Burbank turned to those labeled "mentally defective;" this was a different category entirely from those just labeled abnormal or physically weak in society. Once again, though, he had the chance to argue for the elimination of those who could "never be other than a burden."[320] Even though he would destroy such a defective plant, Burbank did not believe that anyone had the stern cold heart of a Spartan to deal with a mentally abnormal child in that way. Burbank was, in many ways, an optimist about human nature and believed that their capacity for doing good would always outweigh their capability for evil. Along with this optimism, he believed that destruction would not be an issue in the future for two reasons. First, "medical and surgical" science would progress to the point that many things now deemed abnormal would be correctable in a few years.[321] And

[318] Burbank, *Human Plant*, 51.
[319] Burbank, *Human Plant*, 54-55.
[320] Burbank, *Human Plant*, 55-56.
[321] Burbank, *Human Plant*, 56.

second, if the nation truly started the process of “cultivation” that he was proposing, giving all children born in the United States the proper environment, then Burbank was convinced that those born mentally unfit would “become permanently eliminated from the race heredity.”[322] It was only a matter of time before the race improved if the nation would spend but a little time and effort.

There was one other thing the nation needed to do, though, to help this process along. Burbank openly advocated marriage laws to forbid “the marriage of the physically, mentally and morally unfit.”[323] For Burbank, this was a completely separate issue from the issue of elimination or destruction of those society or science deemed unfit. Just as he would never allow a sickly plant to breed, and pass on its bad heredity to offspring, so should the unfit human be forbidden to pass along his or her bad heredity to offspring. It seemed enough for him to simply pass laws to ensure that the unfit would not produce children, but in many ways this was a very naïve position to take as marriage is obviously not a requirement to produce children. As the issue of sterilization became more prevalent in the national debate over eugenic thought, Burbank modified his positions in various ways.

Burbank concluded his work by looking to the future. He did not want his readers to assume that humanity had perfected itself; on the contrary, “Man has by no means reached the ultimate. The fittest has not yet arrived.”[324] In time, the weak would disappear. However, unlike in the past, the weak were not necessarily those that were physically weak; technology and modern civilization had shifted the

[322] Burbank, *Human Plant*, 57.
[323] Burbank, *Human Plant*, 58.
[324] Burbank, *Human Plant*, 73.

emphasis from the physical to the mental realm. There was no reason to assume that evolution was done with humans either; perhaps, given enough time and effort, the mentally strong would develop a sixth sense, a sense of the mind, so that "the man of the future ages will prove a somewhat different order of being from that of the present. He may look upon us as we today look upon our ancestors."[325] For those determined to be mentally fit (like Burbank), the future was all aglow.

But for others, the future was not so bright. "If a race has not acquired and stored among its hereditary tendencies sufficient perseverance and adaptability to meet all the changes to which it must always be subjected by its ever-changing environment, it will be left behind and finally destroyed, outstripped by races better equipped for the fray."[326] The line that shattered the mood of his New Year's resolution of 1922 found much earlier expression here, in this document that seemingly focused on children. While he spent much time on education, as we have seen, yet here he pronounces a racial survival of the fittest. While Burbank did not single out any specific races by name, it could be supposed that there were certain races that Burbank had in mind for those that seemed unable to adapt to modern life. Previously he had faulted the recent Jewish immigrants for keeping to themselves and not being a part of this great mingling of heredity,[327] and he used an Indian as a negative example in a previous section as well.[328] It could be, though, that Burbank was thinking not in terms of races but in terms of nations or regions of the world. Those that could not or would not adapt would find

[325] Burbank, *Human Plant*, 73-74.
[326] Burbank, *Human Plant*, 80.
[327] Burbank, *Human Plant*, 8.
[328] Burbank, *Human Plant*, 68.

themselves increasingly at the mercy of their betters, an argument that followed along with most defenses of colonialism, manifest destiny, or imperialism. It was in America that there was the chance for unprecedented greatness. But there still seemed to be an overall optimism about Burbank's racial theory; there were always exceptions, a best of a race that had something to offer. For Burbank, the key was (as he kept repeating) environment. A race that, in general, did not do well adapting to modern life would soon find itself waning away, but there were sure to be individuals within a race that advanced and prospered. If humanity was to thrive, prosper, and reach its full potential, the best of all races might be needed for improvement of humanity.

Some responded to this vague hopefulness about race. An article from a newspaper in Portland, Maine, spoke of a "Great Race Promised." However, before this could take place, there were some changes that needed to be made to American society. Cities were too crowded with the poor and immigrants: "in short, before Mr. Burbank's plan of elevating the race can be tried out . . . the to-be blended races must be made comfortable in the material sense and there must be infinitely less of the hand-to-hand struggle for existence. Crowding the races can never bring about a desirable assimilation."[329] Burbank would likely agree, with his emphasis on the importance of environment in shaping the formation of people and races.

Another reaction came from a black man who wrote to his local newspaper after reading the *Human Plant*

[329] Newspaper and date unknown, but cut-out article found in Burbank's Scrapbooks, volume 5, page 204, LBP-LOC.

> I, a black man, was led to wonder, and I have since thought of it much, whether there are not qualities in the negro race that will be wanted in that final composite race. Is there not, possible, a strain of music, a banjo thrum perhaps, or a note of suffering patiently endured, or of loyalty to those in authority, that the negro race can contribute to this final composite. I wonder what Mr. Burbank would say to this. Doubtless race prejudice will prevent the complete amalgamation of the black with the white race. But is there not already a sufficient admixture to permit the final race to seize on the qualities of our race that it may need? This is mere speculation, but even we negroes are human and life is as dear to us as to you. We love to think that we as a race shall not wholly die but live, what is worthy of living, in a new race. Is this too much to ask?[330]

This plaintive and logical statement outlines much of the challenge that African-Americans faced in the United States. One of the legacies of slavery was the fact that many descendants of slaves were of mixed ancestry due to the sexual exploitation of the enslaved by their enslavers. The forced "amalgamation" had happened, but was often unacknowledged by a white society that often used a "one drop" of black blood (ancestry) to categorize people as Black and not White.[331] And he asks some pertinent questions. What did Burbank think about this? While he talked a great deal about races in the *Human Plant*, and seemed favorable about their mixing, did he mean for this to apply specifically to whites and blacks intermingling?

One perhaps favorable sign was a series of letters between Burbank and Hallie Quinn Brown. Brown was a professor who taught at various schools

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[330] George L. Johnson, letter to the editor, *Minneapolis Journal*, 17 May 1906, found in Burbank's Scrapbooks, volume 5, page 276, LBP-LOC.

[331] For an extensive overview of the construction of this racial ideology in the United States, see Ibram X. Kendi, *Stamped from the Beginning: The Definitive History of Racist Ideas in America* (New York: Nation Books, 2016); and Michael Yudell, *Race Unmasked: Biology and Race in the Twentieth Century* (New York: Columbia University Press, 2014). For those who tried to "pass" as whites, see Allyson Hobbs, *A Chosen Exile: A History of Racial Passing in American Life* (Cambridge: Harvard University Press, 2014).

including Tuskegee Institute, run by Booker T. Washington. She ran into Burbank at an event and wrote to him, asking for support for Tuskegee. Burbank responded by sending along a bunch of seeds that he thought would do well in their location. His short note concluded, “with kindest regards to yourself, Mr. Washington and the children.” Perhaps there is a tinge of paternalism in referring to the college-age students at Tuskegee as “children,” but not entirely out of place with Burbank’s views on education.[332]

In similar fashion, he was asked to contribute a statement for a published memorial book for Booker T. Washington.[333] Burbank contributed the following:

> Booker T. Washington’s work has been for the colored race in America equal, if not even greater than that of Lincoln. Coming also from an humble source, his life shows what genuine love for his fellow creatures may do in the way of improvement in any case or under almost any circumstances. His influence in the betterment of the conditions of the colored race and through it every individual in the United States can hardly be over-estimated and this influence – all for good – will continue in operation to benefit the world through all time. Men with a love for their fellow man in such degree as in Booker T. Washington have blessed the race only too seldom in the past, but this altruistic spirit is now pervading all mankind and the greatest hope of the human race is that it may permeate all Life. When it does, we need not look further for the millennium.[334]

This is a very respectful and glowing tribute, and there is no reason to doubt the sincerity of Burbank’s words. As a believer in the importance of environment, it was natural for Burbank to praise Washington for his efforts in improving the education (and therefore the environment) for African Americans in the United States. However, the statement says nothing about the possibilities of blending the black

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[332] Hallie Q. Brown, Tuskegee, Alabama, to Luther Burbank, Santa Rosa, California, LS, 10 April 1910, LBP-LOC. Luther Burbank, Santa Rosa, California, to Hallie Q. Brown, Tuskegee, Alabama, TL, 17 April 1910, LBP-LOC.
[333] A. Robert White, Chicago, to Luther Burbank, Santa Rosa, California, TLS, 10 December 1915, LBP-LOC.
[334] Luther Burbank, to A. Robert White, Chicago, TL, December 1915, LBP-LOC.

and white races together. In fact, other than stating that Washington's efforts have benefited "every individual in the United States," there is nothing in his statement that could be understood as challenging a segregated society.

Burbank's thoughts on this matter are made, perhaps, clearer at a speech he made earlier in 1915 at the National Conference on Race Betterment. This was held in San Francisco as part of the Panama-Pacific International Exposition – the same event that drew Edison and Ford to California and enabled them to meet Burbank for the first time. The speech was entitled "Evolution and Variation with the Fundamental Significance of Sex," and featured a question and answer period at the conclusion of his presentation; both the speech and the question and answer session were printed shortly after the conference finished.

Since he would have been considered an expert on plants, one might suppose that the speech would trace the evolution of plants; that supposition would be wrong. Instead, he claims that as "a specialist in the study of Nature" who has dedicated his life and career to "producing new forms of plant life, for the better nourishment, housing and clothing of the race, and the creation of new fragrances and new shades of color in flowers to make life more beautiful," he would be doing something quite different with this paper. Rather than limiting his presentation to plants, he would, instead, be discussing "Life and its origin on this and probably other planets" – ideas "impressed" upon him during his many years of work.[335]

He discussed crystals and amebae, mushrooms and protoplasm. He emphasized the importance of cell structures working together for the good of the

[335] Luther Burbank, "Evolution and Variation with the Fundamental Significance of Sex," *Official Proceedings of the Second National Conference on Race Betterment* (Battle Creek, Michigan: Race Betterment Foundation, 1915: 45.

cell, and then applied that to a much broader spectrum of structures. “A plant, an animal, a man, a society, a nation, a continent or a world whose individual units do not co-operate harmoniously is on the high road to destruction. All that is precious to the whole human race is now being devastated by war which threatens to destroy from the Earth much that had so faithfully and so painfully been built up during the past centuries for the best interests of the race.”[336] The devastating consequences of war put in danger Burbank’s entire plan for the improvement of humanity. It took planning and careful guidance to make improvements, and war threatened to derail the possibility of accomplishing those goals

After more discussion about chemicals and proteins and insects and pollen, he concluded his speech by stressing that progress, for any living species, was dependent on intelligent planning. Improving the environment could accomplish some things, but “maximum development can never be realized” without the “selection of the best individuals for continuing the race. . . . By this means and by this only, can any race of plants, animals or man be permanently or radically improved.”[337] In his conclusion, then, Burbank brings the whole speech back to the goals of the organization to which he was speaking – the Race Betterment Foundation.

The question and answer session was dominated early on by questions about seeds, until the presider[338] asked Burbank this amazing question: “is it possible, by the use of eugenics, and by the control of environment to create a new

[336] Burbank, “Evolution and Variation,” 47-48.
[337] Burbank, “Evolution and Variation,” 50.
[338] Identified later as Stephen Smith, the Vice President of the State Board of Charities for the State of New York.

race of men?" Burbank appeared to be very careful in his answers, at least initially. He admitted the possibility, but what made it difficult was the "lack of knowledge of mankind." More work was needed in this area (whatever Burbank thought that meant is unclear), but he thought that the Conference was a good start.[339]

The presider pushed Burbank a bit further, asking if "it is a biological possibility?" To which Burbank gave a simple reply – "without question." The next question was about time, though – how long would it take to complete such a task? And here Burbank gave a very racialized answer. "If you take the African race, I could not tell you how long. If you take hold of our American race, it would be a very short time." Unfortunately, there is no way to know in what sense Burbank meant the designations of "African" and "American." Did he mean to specifically and only to refer to the people of Africa, and American included black Americans like Booker T. Washington? Or did he lump all people of black skin together as Africans, and Americans only referred to white Americans? Context would seem to favor the latter.[340]

The presider pushed again, seeking a more concrete time frame from Burbank, but this time volunteering the span of "five or six generations." Burbank's response to this query was that it depended completely on the one doing the selecting. To accomplish such a feat would require a massive amount of work from a skilled person of intelligence. At this point an unnamed delegate asked what many would have seen as a key question – "Who is going to be the one who selects?" Burbank gave a most elusive answer – "That I do not know; I will leave

[339] Burbank, "Evolution and Variation," 52.
[340] Burbank, "Evolution and Variation," 52.

that to some other scientist."[341] And here, of course, is a major ethical problem with eugenics programs. Who is doing the selecting? Who is setting the boundaries, and declaring one group to be "unfit" and another group "fit"? This issue was recognized by many who opposed eugenics programs as being the key question that needed defining.[342]

A few years after this, Burbank would, one again, make a speech about the improvement of society, this time at a banquet San Francisco in 1922. Burbank outlined, as usual, his now familiar themes. He began by arguing for an inductive approach to any scientific study. One must observe particulars first, and then work on a "useful or beautiful structure" (of theory) to explain it. To justify his qualifications to do such work, Burbank continued by stressing that he had the necessary experiences to speak on such subjects. "As a specialist in the study of Nature for the definite purpose of producing new forms of plant life, for the better nourishment, housing and clothing of the race, . . . certain very definite conclusions regarding Life and its origin on this planet have been impressed upon me."[343] This had always been one of his biggest complaints about those who challenged evolution or Burbank's ideas about heredity, eugenics, society, or science in general. Since Burbank saw himself as an almost-equal to Darwin, and stood on his fifty year career in the study of plants, he felt that he had some very clear, incontrovertible ideas about "Life" and what was best.

[341] Burbank, "Evolution and Variation," 52.
[342] See Kevles, *Name of Eugenics*, 113-128.
[343] Luther Burbank Luther Burbank, unpublished speech, Metropolitan Banquet, Fairmont Hotel, San Francisco, 21 September 1922, LBP-LOC, 1.

Having provided a justification for the rest of his speech, Burbank turned to the idea of heredity. Since he attributed a great deal of one's character to one's heredity, it was logical that he would say "a good heredity from a clean ancestry is more to be desired than all the titles, honors, and wealth that earth can ever bestow." He lamented the fact that "millions of 'half men'" were being born who did not have the genetic fortitude to live a decent, moral life without "some unusual drug or other stimulant" to make them normal. By this Burbank was not just discussing psychiatric or medicinal drugs; he was hinting at his own disdain for the use of any kind of depressants or stimulants. Burbank had always rejected coffee or other sources of caffeine, as well as the use of tobacco or alcohol. Only those with a "normal nervous system" did not need such stimulants to function in society. Burbank offered a solution on how to purify the human race of such artificial needs. The purity, he argued, would not come through "laws based on punishment; not through religious teaching; not through our normal educational methods. It must and will come only through methods similar to those that have produced and our producing our best grains, fruits, and flowers."[344] In other words, the careful process of selection and controlled breeding that Burbank himself used to produce the best plants must be applied to humanity.

Burbank then gave his own thoughts about the fledgling "nature vs nurture" debate. He had made some contributions to these discussions in his *Training of the Human Plant*, but the hopefulness of that work is not really seen in this speech made almost twenty years later. In fact, it would seem that Burbank repudiated much of his earlier optimism, especially in regard to the education of children. In

[344] Luther Burbank, Metropolitan Banquet Speech, 1.

this speech, he argued that while both heredity and environment played a role in the shaping of an individual's character, environment could only do so much in the short-term. In fact, he continued, there was some degree of danger in the ways that American society had responded to social challenges. The scientific "improvement in the understanding of hygiene and the prevention of disease" had, in fact, eliminated the "weeding out of the unfit in infancy that occurred even a single generation ago." Out of misplaced kindness, or even "stupendous pride and effrontery,"[345] humanity was interfering with the normal laws of the universe as displayed through the evolutionary survival of the fittest. Improvements in medicine, disease prevention, and the universal education of children could not "obliterate hereditary defects from the race."[346] Only natural selection could.

Civilization had arisen through some basic forms of human selection; but now, future generations would be facing an almost insurmountable problem because natural selection had been bypassed and the world would be overrun with the unfit. "The world will be a slaughter house – an insane asylum, and imbeciles and incompetents will walk the earth until the truth shall at last percolate into the minds of all that the unavoidable and unchangeable laws of nature which apply to the improvement of domestic animals and plants also apply especially to ourselves as well."[347] This is a grim vision of the future indeed.

Perhaps because the speech had presented an almost genetic Armageddon, Burbank concluded his speech with some clarifications and positive suggestions. He was not arguing that society must remove those improvements

[345] Burbank, Metropolitan Banquet Speech, 1.
[346] Burbank, Metropolitan Banquet Speech, 2.
[347] Burbank, Metropolitan Banquet Speech, 2.

that had curtailed the process of natural selection. He did not expect society to allow the sick, poor, or insane to simply die, nor was he advocating the execution of such individuals. Instead, he admitted that improving the environment always allowed a species to grow "up to its best heredity possibilities, beyond which it cannot carry them, and lacking which, maximum development can never be realized."[348] Medicine, better hygiene, more food and education could help people reach their full potential. What this improvement in environment could not do was end criminal or insane behaviors. Those were genetic disorders, passed on from one generation to the next.

For Burbank, the true problem lay in allowing those unfit to pass off their genes to later generations. The solution was to only allow select individuals – the best, of course – to breed.

> It is becoming increasingly necessary to impress the fact that there are two distinct lines in the improvement of any race; one by favorable environment which brings individuals up to their best possibilities; the other ten thousand times more important and effective – selection of the best individuals through a series of generations. By this means and by this only, can any race of plants, animals, or man be permanently or radically improved.
> These facts being known, we know how to proceed and difficult as it may appear, it is the only route by which any permanent advances can, or ever will be made. When these two lines of action are <u>combined</u>, all the best qualities of any type are brough[t] forth and fixed – and the field of improvement is limitless.[349]

Once again, Burbank was most likely advocating his now common theme of denying marriage to those society deemed unfit, although it is also likely that he would have supported sterilization laws in addition to anti-marriage laws. In either case, from Burbank's perspective, society had to act in as scientific a manner as

[348] Burbank, Metropolitan Banquet Speech, 2.
[349] Luther Burbank, Metropolitan Banquet speech, 2.

he would with his plants. Burbank would never allow sick, ugly, and mal-formed plants to donate their seeds or pollen to produce more of the same; that is why his plants, when released to the public, were successful and beautiful and world-famous! Humanity did itself a disservice, he argued, and limited the possibilities for their own growth and improvement, when they did not act in the same manner.

Burbank's apparent continued reliance on the prevention of marriage between those deemed unfit was challenged early by a letter writer who had perused his *Human Plant* way back in 1906. The man revealed that he and his wife had determined, before they were even married, "that for the good of the race neither of us should have children." Why that might be, he did not say. There is nothing in the letter itself which would lead one to think this was a person that a supporter of eugenics would deem a "mental defective;' in fact, he used his mailing location as the Boylston National Bank in Boston, Massachusetts – another sign of how far Burbank's ideas had traveled. He claims to have seen a notice that X-ray technicians at the local hospital have discovered they are sterile. So, he tested his sperm (finding them to be plentiful and healthy), and then subjected himself to "about thirty treatments" of x-rays, "during which the spermatozoa lost their motility then became deformed and finally disappeared." It had been six months and nothing had changed.[350]

Merrill saw this as the solution to the problem of the unfit and their potential offspring. Describing the process as "painless" and with "absolutely no other effects," this was a "beneficial" solution to the difficult problem. "I do not believe you

[350] A. A. Merrill, Boston, Massachusetts, to Luther Burbank, TLS, 26 April 1906, LBP-LOC, 1.

can prevent the cohabitation of the unfit by laws against marriage. . . . if the unfit are made sterile their cohabitation is of no importance. . . . Sterilize the unfit and there is an end to them."[351] There is no record of a response from Burbank in regard to this letter, nor is there any sign of a follow-up letter from Merrill in regard to any potential health issues that may have emerged in the succeeding years.

Controlling reproduction was, of course, a major policy concern of the eugenics movement. While Burbank appears to have made no known comments about sterilization, the ideas proposed by Merrill became popular among reformers attempting to place restraints on the reproduction of those deemed unfit. Indiana passed the first sterilization law in 1907, and thirty states had sterilization laws on the books by 1937 for those who committed certain crimes, were in insane asylums, or even for those hospitalized with various illnesses.[352] California led all states with twenty thousand people sterilized, followed by Virginia with eight thousand and North Carolina with seven thousand.[353] Involuntary hysterectomies for black women in the South became so common that they were nicknamed a "Mississippi appendectomy."[354] The Supreme Court weighed in on the issue of involuntary sterilization in the case of *Buck v. Bell* in 1927, ultimately determining that state officials had the power to do these acts in the name of national health.[355]

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[351] A. A. Merrill letter, 2.
[352] Levine, *Eugenics*, 62-63.
[353] Levine, *Eugenics*, 63-64.
[354] Levine, *Eugenics*, 105.
[355] Levine, *Eugenics*, 67-68. For a discussion of that case, see Adam Cohen, *Imbeciles: The Supreme Court, American Eugenics, and the Sterilization of Carrie Buck* (New York: Penguin Press, 2016).

Many of these state laws remained on the books well into the late twentieth century, although they were often hidden from the public eye.[356]

Another key issue for Eugenics societies was that of immigration. Immigrants were often targeted as prolific breeders, and carriers of unwanted genetic traits. In order to keep them from overwhelming the "native" race of the country, stronger immigration laws were necessary.[357] President Coolidge had asked a eugenics-themed question in a 1921 article entitled "Whose Country is This?" While America was a land of opportunity, there should be "no place for the vicious, the weak of body, the shiftless, or the improvident." American society had to be protected from the "clamor of multitudes" who seek to take advantage of Americas institutions and find relief from their troubles and persecutions in their homelands. While some might assimilate and do well, "biological laws tell us that certain divergent people will not mix or blend."[358] It sounds very much like Coolidge took the immigration information that Burbank discussed in his *Human Plant* but interpreted it as a negative rather than a positive.

Burbank's appears to have remained silent on the issue of immigration, but does appear open to visits from those who might not have been accepted in other parts of American society. In 1907 he received two letters asking him to receive visitors from India. The first came from Liberty Bailey, director of Cornell

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[356] For more on these sterilization programs, see Edwin Black, *War Against the Weak: Eugenics and America's Campaign to Create a Master Race* (New York: Four Walls Eight Windows, 2003), and Randall Hansen and Desmond King, *Sterilized by the State: Eugenics, Race, and the Population Scare in Twentieth Century North America* (New York: Cambridge University Press, 2013).
[357] Levine, *Eugenics*, 92-93.
[358] Calvin Coolidge, "Whose Country is This?", *Good Housekeeping* 72 (February 1921): 13-14, 109.

University's College of Agriculture. Bailey asked if two graduates from the University of Calcutta, visiting Cornell at the time, S. N. Sill, and Dutt, could visit him, as the "fame of Burbank has reached even into India and they are very anxious to carry back with them some idea of your experimental methods."[359] In August, an Assistant Chief of the Bureau of Plant Industry for the Department of Agriculture asked if Burbank would welcome Jatindra Chakravarty, who had been sent to America to study agricultural stations and had great interest in visiting Burbank when he arrived in northern California. Interestingly, both letters went out of their way to mention that these visitors were, in point of fact, white. Chakravarty was "a pure-blood Hindoo of the high caste. Although he belongs to the white race, he is very dark in color."[360] Bailey also sought help from Burbank in finding housing for his visitors, since "owing to confusion in the color line, we find that these gentlemen sometimes have difficulty in securing hotel accommodations, although belonging to the highest caste in India."[361] In the absence of any follow-up letters of disappointment from these officials, it seems likely that Burbank greeted these visitors from India just as he did the many others that came through his property. But this incident highlights an on-going argument in America over the racial place of Indians. While their Aryan ancestry might place them solidly in the sphere of whiteness, the Asiatic Exclusion League argued in 1910 that while Western Aryans

[359] Liberty Bailey, Cornell, to Luther Burbank, TL, 20 July 1907, LBP-LOC.
[360] Unknown author, Washington, D.C., to Luther Burbank, TLS, 1 August 1907, LBP-LOC.
[361] Bailey letter.

(Europeans) had come to dominate, Eastern Aryans (Indians) had become degraded and polluted, thereby no longer deserving of being called white.[362]

The fact that Burbank did not receive any additional letters involving students from India may indicate that the issue was now closed for him as well, In regard to immigration, the fact that he contributed money to the Eugenics Society – a staunch supporter of strict immigration laws – might also reveal his true feelings about the matter.[363]

[362] Ronald Takaki, *Strangers from a Different Shore: A History of Asian Americans* updated and revised edition (New York: Little, Brown and Company, 1989), 298.
[363] Letters acknowledging receipt of dues paid: Margaret Andrews, New York, to Luther Burbank, Santa Rosa, TLS, 29 June 1923 and 9 August 1924, LBP-LOC.

Chapter 5: Burbank and Religion

As discussed in earlier chapters, Christianity had played a role in shaping and developing Burbank's life and worldview through his childhood and into his early adulthood. But by the time he was becoming a successful businessman and plant breeder, most aspects of what could be called traditional Christian theology had disappeared from his writings and speeches, to be replaced by a more "modern" emphasis on religion in general, as opposed to Protestant Christianity. As one historian put it, as Americans wrestled with the theological implications of evolutionary theories and industrialization, were "Christians to save their faith by resort to the unbiblical solutions of romantic subjectivism and idealistic pantheism?"[364] For Burbank, the answer is an almost emphatic yes.

Burbank represents most of the characteristics that historians have used to describe the American liberal Christian theologians who emerged after the American Civil War. They were:

> Arminian or Pelagian. With regard to human nature, they emphasized man's freedom and his natural capacity for altruistic action. Sin, therefore, was construed chiefly as error and limitation which education in morals and the example of Jesus could mitigate, or else as the product of underprivilege which social reform could correct. Original Sin or human depravity was denied or almost defined out of existence. As their predecessors of the Enlightenment had done, liberals tried to avoid deterministic conclusions by arguments for the creative and autonomous nature of the human spirit.[365]

Ralph Waldo Emerson's ideas seem to have played a role as well. In an address before Harvard students in 1838, Emerson discussed the person of Jesus Christ, and how the teachings of the Church over the centuries had perverted Christ's original message of love and God's presence in the world. Instead of finding truth

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[364] Ahlstrom, *Religious History*, 764.
[365] Ahlstrom, *Religious History*, 779.

in pronouncements from bishops and priests, one could find it in "the blowing clover and the falling rain."[366] As other historians explained Emerson's beliefs, "[p]eople knew God through intuition, especially when they applied their intuitive abilities to the wonders of nature."[367] Much of this is echoed by Burbank throughout the twentieth century.

Burbank recognized that he had moved away from traditional Christian themes, and perhaps this is why he often used the generic word "religion" as opposed to "Christian" when discussing these ideas. His general belief in God's existence, a historical Jesus who taught love and acceptance, and the importance of ethical living, crossed denominational and religious boundaries (another reason he may have found acceptance with a Hindu Yogi, as will be discussed later). In many ways, the fact that Burbank was so general with these religious beliefs allowed him to tailor his ideas to the tastes of his audience. When speaking about raising children as he does in his *Training of the Human Plant*, he could emphasize that religious ideas should not be based on fear, but when trying to defend the theory of evolution from conservative Christian challenges Burbank could emphasize that science was the more truthful religion.[368]

By the time of David Starr Jordan and Vernon Kellogg's visit to Burbank's gardens in mid-1904, Burbank had become comfortable enough in regard to his religious views to begin publicizing them by publically expressing them. In his letter

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[366] Ralph Waldo Emerson, *Divinity School Address of Ralph Waldo Emerson* (London: Philip Green, 1903), 42.
[367] Jon Butler, Grant Wacker, and Randall Balmer, *Religion in American Life: A Short History*, 2d ed. (New York: Oxford University Press, 2011), 264.
[368] Both of these will be discussed later in this chapter.

accepting Jordan and Kellog's request to visit his gardens, Burbank included some unusual lines for this initial meeting between the three men.

> You may not be aware of the fact that I have a theory of my own of the evolution of the universe and its various manifestations, perhaps as original as Darwin's, Spencers, Keplers or Daltons [sic] in a line with and including all of those, making the whole view more comprehensive and harmonious.
>
> This is a work which has been developing in my mind for many years and having full confidence in the correctness of my views, and also having living proofs I fear no questioning on the subject by any one, for if I am wrong in this generalization I wish to know it.[369]

Either during this visit or on a later occasion in 1904 Burbank gave Jordan a copy of this "work" for his reflection and evaluation. Jordan took some time before responding.

Burbank entitled an early version of the work that he presented to Jordan "A Kinetic Creation: A Universe of Organized Lightning," bearing a handwritten date of February 1899.[370] At times jumbled with jargon and heavy with garbled phrases, this document represented Burbank's first attempt at explaining the purpose and the meaning of the universe in a scientific sense. He filled it with so much spiritual or religious overtones that Jordan, after reading, suggested retitling it "The Relations of Matter and Force" with a subtitle of a "confession of scientific faith."[371] Burbank opened his document with the words "long before the dawn of history man has been trying to solve the 'Riddle of the Universe.'" How did Burbank define this riddle? He conceived its components in human activity: thinking, moving, and living

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[369] Luther Burbank, Santa Rosa, California, to David Starr Jordan, Stanford University, LS, 7 March 1904, LBP-LOC.
[370] Luther Burbank, "A Kinetic Creation: A Universe of Organized Lightning," TD, February 1899, LBP-LOC, 1.
[371] David Starr Jordan, to Luther Burbank, LS, 7 February 1905, LBP-LOC.

in a universe of sight and sound and activity. While scientists have often tried to explain life as a "theory of force acting on something called matter," Burbank obviously considered this explanation as insufficient in providing answers into the nature and purpose of humanity.

A theologian or traditional Christian might answer that God provided the purpose and direction, that the existence of God answered the "Riddle of the Universe." A contemporary might be surprised that Burbank, who grew up attending Baptist churches, would remain silent about God but, just as in his plant catalog, Burbank did not mention God in his "Kinetic Creation." Burbank continued to attend church services with his mother, but in his heart he was no longer a believer in the traditional tenets of Christianity. Without God, how would Burbank explain the universe?

First, he would not explain it in purely materialistic terms. While Burbank may have supported evolutionary and naturalistic thinking, and had moved away from traditional Christianity, he remained uncomfortable with a universe devoid of any spiritual power or significance. He still wanted to maintain something beyond the purely material world. For example, he wrote:

> We have been taught to believe that the Universe was made of discreet particles of hapless, helpless, dead material which possessed no power of its own, being forever tossed about by various forms of force.
>
> Only during the last few years of the nineteenth century has it fully dawned on the world of science that what has been called matter is only what may be called a condensed form of almost inconceivable forces, in other words, that the Universe is one of dynamic and static forces only, without a trace of dead matter, or as some would say a universe of motion or thought, for thought has been found a living

> solvent force, whose power when rightly directed knows no bounds.[372]

This idea of that all is one (in this case, that matter is condensed force) was a philosophical idea of the time that came to be known as monism. Usually this presented as the union of mind and matter, as was the case with Ernst Haeckel, a German biologist who published a book in 1899 entitled *The Riddle of the Universe*. While he does not say so, it would appear that Burbank was distilling Haeckel's concept to apply to force in such a way that this theory might be better applied to the study of plants. It may have been this monistic description that Jordan would later admit that he found hard to understand.[373]

At times, Burbank stood in agreement with the accepted scientific thinking of the time, with statements such as "energy cannot be destroyed."[374] At other times, he foreshadowed later developments by scientists such as Albert Einstein, with statements like "it would seem . . . that three elements only are needed to produce the universe—Energy, Time and Space. Rythmical [sic] vibrations in space, - measured by time, - produced by energy."[375] At other times, he seemed far out of touch with the prevailing scientific view (perhaps one reason why Jordan initially spoke with caution) with statements such as "an atom is a convenient unit to build upon, but no one has ever seen, weighed, measured or proved its material

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[372] Burbank, "Kinetic," 1.
[373] For more on this aspect of monism, see Todd Weir, "The Riddles of Monism: An Introductory Essay," in *Monism: Science, Philosophy, Religion, and the History of a Worldview*, ed. Todd Weir. Palgrave Series in Intellectual and Cultural History (New York: Palgrave, 2012), 1-44.
[374] Burbank, "Kinetic," 2.
[375] Burbank, "Kinetic," 4.

existence."[376] The paper itself, to a modern reader, is a jumble of thoughts ranging from speculative to true to downright false.

Additionally, Burbank often waxed poetic. He was, after all, arguing for a spiritual explanation of the universe. So, if matter and energy were merely two sides to the same coin, and all forces were linked together, then "harmonious forces always tend to health, integrity and continued life or motion. Antagonistic forces to destruction, disintegration and death."[377] It was not just mere existence that was united, though, but social forces as well: "moral, mental, social, legal, political, chemical, mechanical and planetary life are all under the same laws."[378] The mind was one more type of force that humanity could harness and use for good (harmony) or evil (discord). "The infinite Psychic forces which sweep the synchronous strings of our minds are organized, digested, embodied and accepted, or liberated and rejected by the supreme judge in session, the vital spirit of the whole."[379] Burbank's overall point of this document, though, can be seen in his last statement: "we may fairly conclude that our Universe is not half dead, but all alive,"[380] a sentiment that Burbank would express numerous other times throughout his career. It was this, perhaps more than anything else, which would have led Jordan to call this a "confession of scientific faith;" no bland, cold, materialistic view of the universe, this might be more appreciable to an American interested in leaving traditional Christianity behind while embracing the more scientific ideas of the time. It would have been a way to still argue for good, old-

[376] Burbank, "Kinetic," 1.
[377] Burbank, "Kinetic," 2.
[378] Burbank, "Kinetic," 2.
[379] Burbank, "Kinetic," 3.
[380] Burbank, "Kinetic," 4.

fashioned morality (calling it, instead, harmony with the universe) without having to believe in God or the strict creed of a traditional faith.

Jordan's response to this work was revealed in an interesting series of letters that flowed back and forth between him and Burbank in 1905. Jordan first admitted that "I have absolutely no way myself of judging its value. I do not feel at home in the region of Monism, and I do not know whether matter and force are one, or which is the one, or whether there is any difference which one it is if they are one." He added that it might be in Burbank's best interest to delay publishing the paper, as his opinions might be either in direct opposition to already established thought (and unless Burbank had more concrete proof, he should keep his generalizations to himself) or they might be the exact opinions of other scientists (and therefore he would not be seen as original or important, merely copying the works of others). Either way, Jordan promised to do more research, and see what others at Stanford thought who dealt more specifically with this kind of theory.[381]

Burbank responded with a humility not quite present in his initial letter. He apologized for having "troubled you about the paper on Force and Matter." But, while he might not be as boastful at this point (he did not mention Darwin, Spencer, or Kepler again), he still believed "that a speculative generalization in its place is as legitimate and important in leading to valuable truths and the discovery of facts as is the discovery of individual facts."[382] It would seem that, on some level, when confronted by the education, prestige, and the obvious intelligence of Jordan and

[381] David Starr Jordan, to Luther Burbank, LS, 28 January 1905, LBP-LOC.
[382] Luther Burbank, to David Starr Jordan, LS, 2 February 1905, LBP-LOC. Emphasis in original.

Kellogg, Burbank was not as confident in his paper as he had been previously. Jordan did as he promised, though, showing the paper to a mathematician more familiar with the monism implicit in Burbank's work, and the paper was in some way validated. Jordan told Burbank that he would "send it either East of West, as you may see fit" with his endorsement if Burbank wanted it published.[383]

It was perhaps this kind of encouragement that gave Burbank the confidence to speak in often mystical terms during his lectures at Stanford University. In one of the first of these sessions, Burbank was discussing a group of poppies during one of his projects (complete with the accompanying slides). He remarked:

> Another remarkable thing about this crossing [of] the poppies is that while one parent was an annual and the other a perennial, both parents blooming for a short period of a few weeks in the summer time, the hybrid plants bloomed all year round. This is another evidence of the conflict of the life forces. They did not know when to stop. In the cross of the plants the parentage is divided and in a state of struggle. Sometimes they cannot agree to stay together and so they die.[384]

Here the innate characteristics of the plants were like individual personalities or powers which were sometimes at war with one another. This helped explain for Burbank why so many of his cross-bred plants died either shortly after sprouting or shortly after blossoming: those inner characteristics could not get along. Later in the interview he described another plant that he produced. He wanted to see where it might thrive, and so he "planted it under all conditions, in the green house, out of doors, in the shade and in the sunshine. I prized it highly, but all of a sudden

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[383] David Starr Jordan, to Luther Burbank, 7 Febraury 1905, LBP-LOC.
[384] Luther Burbank, interview with David Starr Jordan and unnamed students, Stanford University, California, 3 October 1905, page 7, LBP-LOC.

all the plants died at once, outside indoors, everywhere. It was an internal dispute among the life forces. The ancestors could not agree and so the plant died."[385] Here was an almost spiritual battle within the "life forces" internal to the plant, where the powers stored within its ancestors fought to determine just what sort of plant would emerge in the rich nutrients and prosperous environment of Burbank's gardens.

In another lecture, Burbank began by describing things through the analogy of music. He stated that how existence initially came about may never be known (a strong denial of the Christian doctrine of creation), because "our senses are limited to only a few octaves of the great symphony of Nature." Even these limited abilities, however, were greater than those of other living beings. "Plants respond to but a few of the simple fundamental environmental tones of nature; animals respond to more tones than a plant; while the wonderful mind of man responds to a thousand tones and overtones in the great symphony to which no animal or plant can respond as there exists nothing in its organism to respond."[386] This was a different sort of mysticism from his initial paper handed to Jordan, but still the kind of language that some of the University-trained scientists might have found troublesome.

He discussed many theoretical things, such as the nature of light, electricity, heat, chemical reactions, and even radiation. He wanted to discuss "life forces," but knew that there had not yet been derived a way to study these primordial or basic

[385] Burbank Stanford interview, 3 October 1905, 8.
[386] Luther Burbank, "Life, Variation, Environment, Heredity," 1, LBP-LOC.

forces. But that did not stop him from taking another shot at those who would argue for a strictly materialistic view of the universe.

> The mechanistic theory of life which has active adherents does not by any means explain the cause of life or even its fundamental activator. No one will doubt that life is dependent on chemical reactions, but farther back than chemical, heat, light, electrical, and magnetic phenomena must lie a still more subtle undiscovered form of energy as exhibited in mind perhaps or something similar all penetrating, universal activator having qualities too etherial [sic] for analysis.[387]

Once again – for a Christian, the question of origin would find its solution in the direct activity of God. Burbank was willing to reject traditional religious answers to these sorts of questions, but he would never accept a purely rational/materialistic explanation that abandoned any sense of a spiritual side to life. For the next few pages of the lecture, Burbank explained, in painstaking detail, the nature of plants, how they grow, gain nutrients, breathe, and the like, covering all the sorts of things that a basic study of botany would. There could be no doubt, though, that underlying all of this was Burbank's more mystical and theoretical ideas.

In his *Training of the Human Plant*, Burbank also touched on various religious issues. In an early section, he argued that there were four essential psychological ingredients to the general environment for the child. First, the children must be reared in love. They must be of primary importance, and it must be a love not based in selfish emotion or "mere sentimentality."[388] Adults needed to be honest with children; deceptive behavior, or improper motives, were all discerned by the child. The child should be taught self-respect, and part of this was

[387] Burbank, "Life," 5-6.
[388] Burbank, *Human Plant*, 22-23.

a true understanding of “the value and importance” of money.[389] Finally, the child should be kept away from fear. Here, Burbank spoke openly about religion.

> Keep out all fear of the brutal things men have taught children about the future. I believe emphatically in religion. God made religion, and man made theology, just as God made the country, and man made the town. I have the largest sympathy for religion, and the largest contempt I am capable of for a misleading theology. Do not feed children on maudlin sentimentalism or dogmatic religion; give them nature. Let their souls drink in all that is pure and sweet. Rear them, if possible, amid pleasant surroundings. . . . Do not terrify them in early life with the fear of an after-world. Never was a child made more noble and good by the fear of a hell. Let nature teach them the lessons of good and proper living, combined with an abundance of well-balanced nourishment. Those children will grow to be the best men and women. Put the best in them by contact with the best outside. They will absorb it as a plant absorbs the sunshine and the dew.[390]

The result of all this was that if the child had been raised in love, honestly, with self-respect and without fear, then when the child became an adult there would be little inclination toward crime or other evil behavior. “The child is the purest, truest thing in the world” and if society wanted pure adults then they needed to help keep children pure.[391]

In a very public fashion, then, Burbank declared his opposition to traditional Christian positions in a section couched in the language of the proper education and rearing of children (all, it should be added, from a man without much schooling and no children of his own). Burbank might believe in God, but saw no reason to worry about such humanly invented things like theology or dogma. He also made clear his rejection to the traditional idea of hell, and issue that would emerge in later interviews as well. It would seem, on the surface, that Burbank had little

[389] Burbank, *Human Plant*, 26-27.
[390] Burbank, *Human Plant*, 28-29.
[391] Burbank, *Human Plant*, 24-25.

respect for capital punishment – at least of the religious kind. The fear of hell and future punishment did not produce good citizens, only craven, timid, dishonest ones.

Burbank returned to religious ideas towards the end of *Human Plant* as well, directly challenging the Calvinistic theology to which many in America would have (at least) paid lip service. “There is no such thing in the world . . . as a predestined child—predestined for heaven or hell. . . . Even total depravity never existed in a human being.”[392] Burbank once again used an illustration from his own work to show that there was no such thing as total depravity; every plant, not matter how useless, had at least one good trait. That might not have been enough to keep it from Burbank’s bonfire piles, but that by no means made it totally depraved. Burbank was not denying the power of heredity; but throughout he stressed that heredity could be changed through consistency of environment, which also would render predestination seemingly null and void. He could make this argument because he believed that “heredity is the sum of all the effects of all the environments of all past generations on the responsive, ever-moving life forces.”[393] The modern human was not shackled by the sins of Adam in the primordial age (the church’s doctrine of “original sin”), but had been shaped and formed by every previous generation of ancestors passing along traits learned through their environments. It took five to ten generations to fix a particular desired trait in one of his plants, he argued; after that, it was set. So too could it be with people, if the right program was used. Perfection was possible; an outright rejection of traditional

[392] Burbank, *Human Plant*, 67.
[393] Burbank, *Human Plant*, 68.

Calvinism (although an idea with which John Wesley and some later Methodists would have been more comfortable).

Burbank was not afraid to dabble in other areas of much-less accepted theories. One such belief was in what would come to be called telepathy. In 1923 Burbank would write an article whose title alone sets the stage for the rest of it: "I Can Send out Thought Waves: The Greatest Radio set in the World is Man Himself."[394] Burbank did not claim that he was alone in this ability, but that it was, in fact, a family trait passed along to him and his sister Emma by their mother, Olive. "My mother's brain was both a transmitting and a receiving radio-telephone instrument. I cannot recall a time so far back in my childhood that I did not know this. I thought nothing about it then because all of us were familiar with mother's ability to receive information in this way."[395] If this is not an example of Burbank modifying his memory to tell a good tale, then perhaps the earlier family experiments with table-tipping had been a way to try to supernaturally rationalize their belief in these maternal powers.

He gave two family stories as proof of his mother's abilities. The first came when he was a little boy, and his parents had travelled out of town to visit family for a wedding. That evening Olive began to cry, because she knew – through her gift – that Burbank had broken his arm. They left immediately for home, to discover that he had, in fact, broken his arm at about the same time as when she began crying. The second example involved the death of Olive's father. She knew that he had suddenly taken ill, and after a few hours of sadness, declared to Samuel and the

[394] Cannot track down this article – it was found in cut and pasted format in volume 17 of his scrapbooks, LBP-LOC.
[395] Burbank family scrapbooks, volume 17, 1917-1922, page 48.

rest of her family that he had passed away. The next morning, while looking out the window, Olive announced that her brother Hiram was on his way to announce the death. In a couple of more hours, Hiram did arrive with the news that Burbank's grandfather had died – at the exact moment when Olive had announced as such to her family.[396] There is no outside confirmation of these events, and by the time Burbank told these stories Olive had died, and his sister Emma was the only one remaining who could have seriously challenged these stories. While Burbank may not have been completely fabricating this event, it is possible that his enthusiasm for the subject matter dramatized the story in unhistorical ways.

Burbank then continued by giving examples of his own telepathic prowess, as well as Emma's. Burbank said that shortly after arriving in California, "I became aware that, at that instant, I had received a message from someone I knew in Massachusetts. The message contained information and asked a question. I answered the question instantaneously" and the experience was later confirmed through a letter. He claimed that, at the time of his writing, the message-sender was still alive and could confirm the story. While it may be logical that Burbank was referring to Emma, the fact that he did not refer to this message-sender as his sister, when he had already mentioned Emma's ability, implied that this was someone different. Burbank stated that Emma had been tested by the University of California, apparently successfully, recording a score of seven out of ten messages received. The last few months of Olive's life were full of illness, and Burbank would send a message to Emma (rather than a physical telegraph or letter), and she

[396] Burbank family scrapbooks, volume 17, 1917-1922, page 48.

always arrived on the next train to Santa Rosa. When he was thirsty in the fields, he could send a message to Emma and she would bring him a glass of water.[397]

Burbank had a special purpose in mind in relating these stories that had nothing to do with self-promotion or the cultivation of his status as a scientific "wizard."

> A few years ago, such incidents would have been attributed to mendacity, insanity, or the supernatural. I relate them now, not because I believe my mother was and my sister and I are supernormal, but because I am convinced we are not. I believe we have all been broadcasting receiving from the beginning of human thought. Those who can send messages to particular persons differ from the others only in that they can direct their thought-waves where they wish them to go. The greater part of humanity simply broadcasts.[398]

He continued by trying to defuse a critic who would argue that all this was speculation, that there was no proof. Burbank pointed out that no one considered (wireless) radio possible until just recently. If brain activity was electrical, and radio waves were sent electronically, then the brain must act in a similar, although "infinitely more wonderful" way than simple radio.

The idea that every person had this gift, and was using it all the time, was important for Burbank's next argument. He believed the "ether' must be full of the broadcasted thoughts of humanity. Strong thoughts would naturally crowd out the weak thoughts, just as a strong radio signal would crowd out a weak one, and if multiple people had the same thought, the combined broadcast could "swell into a tremendous chorus, even though the human *transmitters* may not individually be very strong senders." He then blamed the current "sick state of mind of the world"

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[397] Burbank family scrapbooks, volume 17, 1917-1922, page 48.
[398] Burbank family scrapbooks, volume 17, 1917-1922, page 48.

on the fearful and evil thoughts that humans were broadcasting. The war in Europe resulted in nine years of millions of people "sending out vibrations of fear, hatred and despair, while in America we have been sending out vibrations of greed." Burbank was obviously criticizing those in America who had profited from the war, but their behavior was not completely their fault. Different people had reacted in different ways to the vibrations of the broadcasted thoughts of humanity.[399]

Things had been better in the past, Burbank admitted; a more considerate age would arise again, but not "until the world gets a new set of thoughts." It was fear that caused the most problems. Ancient humans had good reasons to fear – "wild animals, savages and starvation" – but modern humans needed to work to live their lives free of fear and worry. The constant broadcasting of fear simply made it harder for the unafraid to remain unafraid. "Everybody who thinks fear makes it more difficult for everybody else to live unafraid. We should perhaps be a world of lunatics if it were not for the strengthening vibrations sent out by those who, wiser than the rest of us, have forcibly taken hold of their minds and eliminated fear." Burbank probably included himself in that group that had learned, in childhood, to live without fear. He concluded his argument by returning, as he often did, to the rearing of children. "It is an awful thing to frighten a child. Every frightened child is not only an affliction to itself, but it grows up to become a broadcaster of more fear."[400] It is clear, from Burbank's other remarks on the subject of children and fear, that he primarily had in mind Christian teachings about hell and punishment. The message was that adults needed to learn to be unafraid,

[399] Burbank family scrapbooks, volume 17, 1917-1922, page 49.
[400] Burbank family scrapbooks, volume 17, 1917-1922, page 49.

and to learn to raise their children to be the same. The state of the world would naturally improve as humanity's through broadcasts improved.

A few years later, an interested individual sent by telegram three questions for Burbank to answer. First, if Burbank thought it was possible to create an electronic device to transmit and send thoughts; second, if thought waves had enough power to create a physical image; and third, if this mental transmission could become as useful and common as the telephone. It might seem logical, based on Burbank's previous article, for one to think that he answered yes to all three questions. Perhaps the intervening years had led Burbank to revise his views, but Burbank was more negative in dealing with the possibilities raised by these questions. In regard to the first question, Burbank stated that it was possible, but not anytime soon. There were no machines capable, at that time, of registering brain waves, and the thoughts themselves were too faint to be registered by anyone other than humans and some animals like dogs, horses, and birds (and, as shall be seen later, apparently plants).[401] These animals had highly developed sense – more refined than humans – and were thus capable of discerning at least some of the thoughts broadcasted from human minds.

Burbank answered the second question with a definite no. It took a great deal of vital energy, Burbank argued, to send any message over any distance at all through the mind, so it would be impossible or unprofitable to create physical images in this manner while there were wonderful electronic gadgets that could

[401] Since there were scientists and researchers who had been developing what would come to be known as Electroencephalography, or EEG, for over a decade, either Burbank was unaware of this development – a good possibility – or he meant that, while a researcher could register the existence of waves, the knowledge contained within them was elusive and unrecognizable by machines.

perform the same operation a great deal more efficiently. Burbank did admit that the “fakirs” in India were able to produce images (none of which showed up in photographs), and that others had laid claim to being able to produce such images; however, he stated that while “certain mediums are under scientific test . . . no definite proof of their real existence in fact has come within my observation.” The third question was answered similarly to the other two; thought waves could never be used like the telephone. They would always remain weak and ineffectual, unless there were dramatic advances in electronics, with equipment invented that lay far beyond the capabilities of anyone in at that time.[402]

The mental radio issue would arise again a few months later with another series of letters, this time from a lecturer, author, and “broadcaster” named Harriette Roberson. Apparently, Roberson and her secretary had visited Burbank earlier, and now Roberson had fallen ill. The secretary reported, “I have been trying to think what to do and who to call on for help, when the memory of our lovely visit to your beautiful garden came to me, and a voice seemed to say, ‘write Mr. Burbank he can help her.’ So I am writing to you and asking you to send her healing thoughts as I know you can help her.”[403] Burbank’s reputed “healing hands” had now been extended to include the power to heal, by the mind, at a distance. It must have “worked,” for Roberson did recover, and was able to write back to Burbank at a later date that her work was growing tremendously. In addition to dramatic healings (a crippled man threw away his can and walked), she took the

[402] Luther Burbank, Santa Rosa, California, to Hugh Weir, Hotel Latham, New York City, New York, LS, 17 January 1925, LBP-LOC.
[403] Nellie M. Schonacker, Denver, Colorado, to Luther Burbank, Santa Rosa, California, LS, 3 May 1925, LBP-LOC.

opportunity to inform her "audience about you, the greatest living American."[404] For the thousands who came out to hear Roberson talk about mental cures for physical ailments, they were treated, then, to more tales of Burbank's greatness and healing powers.

Burbank's approach to and embrace of mental radio has parallels to events taking place in England during the same time period. The 1882 formation of the Society for Psychical Research saw many leading scientific figures in Great Britain join this institution to apply scientific principles – especially from the growing field of physics - to the spiritual world. Seeking to determine once and for all if there was any validity to the claims of spiritualism and other esoteric practices, this organization struggled to answer criticisms from both believers in spiritualism and criticisms from more skeptical scientists.[405]

Burbank received at least one warning from a concerned outsider about Roberson's activities and her use of Burbank's name. Thomas Horner, a lawyer from Seattle, wrote Burbank to make him aware of the situation in case he did not already know. Horner told Burbank that Roberson was constantly invoking Burbank's name in support of her programs, but there was nothing different from Roberson's ideas and the groups already known as Christian Scientists, Mental Scientists, New Thought Practitioners, or Faith Healers. Horner pointed out that Roberson was scamming individuals by offering free lectures first, to gain interest,

[404] Harriette Gunn Roberson, Denver, Colorado, to Luther Burbank, Santa Rosa, California, LS, 1925, LBP-LOC.
[405] For more on this debate in England, see Richard Noakes, *Physics and Psychics: The Occult and the Sciences in Modern Britain*, Science in History (Cambridge: Cambridge University Press, 2019).

and then charging climbing fees for the additional lectures.[406] Horner also included an interesting pamphlet that was part of Roberson's material. The pamphlet began by discussing Burbank's life and work, then Roberson's series of available lectures. The back cover, though, offered another interesting item: the "Roberson Radio-Mind Broadcasting Station."

> Knowing that where two or three are gathered together in loving, sympathetic, intelligent mental co-operation miracles are wrought along the line of renewed health for one's self and dear ones, financial resources are increased and happiness found.
> Mrs. Roberson has decided, at the request of hundreds of her students, to have a Roberson Radio-Mind Broadcasting Station. Those desiring help along the lines of Health, happiness, Success and Faith, will please 'tune in' at the specified moments, using the formulas taught by her in her classes.

A schedule of times then followed. To receive messages about "Health and Success," a "listener" was to "tune in" at nine in the morning; for "Guidance," ten minutes later, for "Inspiration," one in the afternoon, for "Rest," ten in the evening, for "Health," ten minutes later, or "For Others" ten minutes after that.[407] Before most radio shows existed, Roberson had a "radio show" structured as the later ones would be, with a theme or individual show occurring at a regular time.[408] While Horner was obviously a skeptic, the issue of mental telepathy and mental broadcasting was not decided in Burbank's lifetime, and it continued to be debated for decades.

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[406] Thomas R. Horner, Seattle, Washington, to Luther Burbank, Santa Rosa, California, LS, 1925, LBP-LOC.
[407] Harriette Gunn Roberson, "The Success Achiever," Pamphlet dated July 1925, LBP-LOC.
[408] This is based on the timeline located on the website http://www.old-time.com/golden_age/index.html, accessed on 24 January 2011.

Burbank also saw himself involved in another controversial and new religious movement – new, at least, as far as America was concerned. In 1920, Paramhansa Yogananda arrived in the United States after a vision told him to go as a commissioned representative of Kriya Yoga, a meditative form of Hinduism. Yogananda considered it "the scientific technique of God-realization."[409] Yogananda gave an invited speech entitled "The Science of Religion" in Boston to the annual meeting of the Unitarians; the speech was later reprinted in both pamphlet and book form. Yogananda toured the States, and eventually settled in Los Angeles; there he established the Self-Realization Institute in 1925.[410] He continued to teach the practices of Kriya Yoga until his death in 1952.

When Yogananda published the first edition of his *Autobiography* in 1946, twenty years after Burbank's death, he opened the book with "Dedicated to the Memory of LUTHER BURBANK An American Saint."[411] Chapter thirty-eight dealt specifically with one of Yogananda's visits to Burbank, and he recounted an unusual conversation he had with Burbank.

> "The secret of improved plant breeding, apart from scientific knowledge, is love." Luther Burbank uttered this wisdom as I walked beside him in his Santa Rosa garden. We halted near a bed of edible cacti. "While I was conducting experiments to make a 'spineless' cacti," he continued, "I often talked to the plants to create a vibration of love. 'You have nothing to fear,' I would tell them. 'You don't need your defensive thorns. I will protect you.' Gradually the useful plant of the desert emerged in a thornless variety."[412]

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[409] Paramhansa Yogananda, Autobiography of a Yogi, 7th ed. (Los Angeles: Self-Realization Publishers, 1956), 354.
[410] Yogananda, Yogi, 352, 357.
[411] Yogananda, Yogi, iii.
[412] Yogananda, Yogi, 360.

The conversation did not end there. Burbank told him that he saw humanity as "one vast plant, needing for its highest fulfillments only love, the natural blessings of the great outdoors, and intelligent crossing and selection. . . . We must return to nature and to nature's God."[413] Once again, Burbank was not afraid to express rather mystical ideas, quite divorced from traditional Christian practices.

Yogananda took this opportunity to explain about his school for children that focused on outdoor classes in an "atmosphere of joy and simplicity." He reported that Burbank was delighted to hear of it, and this seems likely as many of the themes expressed were little different from Burbank's own themes for education stressed twenty years before. Burbank told Yogananda that the years of working with nature had given him "a boundless spiritual reverence" which allowed him, at certain times, to "have been able to heal sick persons . . . , as well as many ailing plants."[414] Here, Burbank connected his ability to heal not just because his mother could, but because of his close understanding and working with nature.

Yogananda went on to claim that he had trained Burbank in Kriya Yoga, who then practiced it regularly. In fact, the *Autobiography* included a printed, signed letter of support from Burbank (that is worth quoting in full).

> I have examined the Yogoda system of Swami Yogananda and in my opinion it is ideal for training and harmonizing man's physical, mental, and spiritual natures. Swami's aim is to establish "How-to-Live" schools throughout the world, wherein education will not confine itself to intellectual development alone, but also training of the body, will, and feelings.
> Through the Yogoda system of physical, mental, and spiritual unfoldment by simple and scientific methods of concentration and meditation, most of the complex problems of life may be solved, and peace and good-will come upon earth. The Swami's idea of right

[413] Yogananda, Yogi, 361.
[414] Yogananda, Yogi, 363.

> education is plain commonsense, free from all mysticism and non-practicality; otherwise it would not have my approval.
> I am glad to have this opportunity of heartily joining with the Swami in his appeal for international schools on the art of living which, if established, will come as near to bringing the millennium as anything with which I am acquainted.[415]

Several ideas of importance appear in this short letter. First, Burbank stressed the theme of the importance of education once again, as well as an education that was more holistic in nature (just as he himself had argued.) Second, Burbank emphasized the scientific and practical nature of Yogananda's system. This was not some strange blend of mysticism and irrational behavior that one might associate with the unfamiliar Hinduism of India; instead, it was as if Burbank saw no difference between Yoga and any other Western scientific approach to controlling the body and mind. Finally, Burbank took a little jab at Christianity, as the mention of "the millennium" only made sense in a Christian world-view; however, the peaceful reign of Christ on earth that the millennium represented would not be ushered in by any of the standard denominations that Burbank had been affiliated with or that would have been familiar to Americans of the time. No, the millennium would be ushered in by practitioners of this unknown, Indian faith.

Some of this characterization of Burbank and his thoughts was probably an elaboration made by Yogananda after twenty-some years, to incorporate Burbank's legacy and add legitimacy to Kriya Yoga. None of the sentiments expressed by Burbank in Yogananda's chapter, however, contradict any of the known beliefs of Burbank: he did talk to his plants in the understanding that he could communicate

[415] Luther Burbank, Santa Rosa, California, to Paramhansa Yogananda, Los Angeles, California, 22 December 1924, quoted in Yogananda, Yogi, 364.

with them on some level; he did believe that he had the power to heal; he wanted educational reform; and he was unsatisfied with institutional Christianity.

The speech that Burbank made in 1924 entitled “Science and Civilization” (that dealt with the issue of evolution) could have been entitled “Science and Religion.” Burbank began by defining science as “knowledge arranged and classified according to truth, facts, and the general laws of Nature.” Most Americans would have agreed with that working definition, but Burbank continued by stating that “all personal, social, moral, and national success depends upon the judicious wisdom of our choices made by the aid of science.”[416] Not religion, not one’s approach to or belief in God, but science mattered most in humanity’s future. This was essentially the sentiment, expressed throughout the speech and in different ways over the next couple of years, which would bring such trouble for Burbank.

After reiterating certain now-common Burbank themes (the entire universe was alive, and life was heredity combined with environment), Burbank began his discussion of religion by pointing out that ancient societies were full of the worship of different deities, except for the monotheistic Hebrews. They, however, worshipped a deity who was

> jealous, cruel, vindictive and having most of the weaknesses and bad habits of primitive man; this was as a step in the path of evolution towards man’s present conception of God; the God within us is the only available God we know, and the clear light of Science teaches us that we must be our own saviors, if we are to be found worth saving; in other words, to depend upon the “kingdom within.” The manhood and womanhood which would make the most of life in *service* to others is a sublimated form of the best of self which leads

[416] Luther Burbank, “Science and Civilization,” speech before the Federated Church, San Francisco, 23 December 1924, typed copy, page 1, LBP-LOC.

> the way to a long lifetime of usefulness, happiness, health, and peace.[417]

Many of the most liberal Christian theologians would have agreed completely with Burbank's characterization of the Hebrew God of the Old Testament; most Christians in America, however, would have found such language disturbing, especially as Burbank was essentially criticizing the integrity of the Bible and its presentation of the person of God. In addition, Burbank denigrated the person and work of Jesus Christ as the savior of humanity when he stated that science taught that "we must be our own saviors." In one short paragraph, then, Burbank attacked the integrity of the Bible, the character of God, and the uniqueness of the work of Jesus, all sentiments sure to be condemned by most American Christians.

Bur Burbank was not finished. Humans might have progressed somewhat from their ancient ancestors, he argued, but modern people were still "slaves yet to war, crime, bigotry, and ignorance—the only 'unpardonable sin.' Slaves to ancient 'taboos,' superstitions, prejudices, and fallacies, which one by one are slowly but surely weakening under the clear light of the morning of science, the savior of mankind. . . . There is no personal salvation, there is no national salvation, except through Science."[418] Here, Burbank attacked the superstition he believed dominated the religious institutions of his time. Science – something done by individuals and based on facts and the careful observation of the universe – was the true savior of mankind.

Burbank continuously rejected traditional aspects of Christian theology. The scientist who lived for truth and proper living found that "no avenging Jewish God,

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[417] Burbank, "Science and Civilization," 2.
[418] Burbank, "Science and Civilization," 3.

no satanic devil, no fiery hell is of any interest to him."[419] Science, with its emphasis on truth, learning, and, for Burbank, ethics, was "not necessarily connected with obsolete misleading theologies"[420] that were not true religions. Science was the only true religion.

This was most likely why, after reports of this speech circulated in the newspapers, critical letters began to arrive almost daily. One anonymous responder clipped the article reporting Burbank's speech from a newspaper and wrote, in dark pencil on the back, "All churches are 'trying' to do good, why destroy their serenity."[421] Another responder wrote Burbank to both ridicule and chastise him for his dismissive attitude to the God revealed in the Bible. After addressing the letter to the Luther Burbank who "says he belongs to Apes," the writer continued: "Very Evidently you rank with Robert Ingersoll,[422] & do *not* believe in the Bible; one book, that your books of science have never been able to upset. The Bible says that man was created originally, in the 'image of God.' There are apes to be seen in Zoo's [sic]. If you want to claim them as *your* ancestors, that is your own opinion. But don't include the rest of peoples in 'your' ape family. The Bible forcibly disagrees with you."[423]

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[419] Burbank, "Science and Civilization," 3.
[420] Burbank, "Science and Civilization," 4.
[421] Anonymous handwritten note on back of newspaper clipping, LBP-LOC.
[422] Ingersoll was the most public supporter for agnosticism in the United States until his death in 1899. See Susan Jacoby, *The Great Agnostic: Robert Ingersoll and American Freethought* (New Haven: Yale University Press, 2013); and Eric R. Schlereth, *The Age of Infidels: The Politics of Religious Controversy in the Early United States* (Philadelphia: University of Pennsylvania Press, 2013).
[423] Anonymous postcard, Council Bluffs, Iowa, to Luther Burbank, Santa Rosa, California, 27 December 1924, LBP-LOC. Emphasis in original.

Over the next few weeks and months other letter writers would send their thought about Burbank's support of evolution, many of them anonymous. One such writer had attended a screening of the movie "The Creation of Man" and offered a sarcastic appraisal of its evolutionary theme. He was amazed at all the different stages of evolution, with all the varied animals, bugs, and plants that appeared on screen, and yet "each retained their identity and are alive today and have not apparently changed their disposition other than such as have been made tame by the last of the evolved ones which is as you fellows say MAN." He found it a "mean trick that God played on our ancestors, by starting life in the form of a simple sea germ . . . finally evolving a human being from one of them and still leaving each of the 333 millions, except man, in the same old state." He lamented that the public did scientists and the country a disservice in their rejection of the truth of evolution, and "it is a crime on our part to be so inconsistent in not throwing our Bible and our teachings by Christ away."

The writer then turned more serious, and pointed out to Burbank that there were no supporters of evolution who were also willing to call Christ "the son of God in the sense that he was conceived by the Holy Spirit. It is impossible for these two things to go side by side; Evolutionist, so called who reject the Mosaic theory, cant [sic] accept Christ." He praised Burbank for his skill with plants but lambasted him for failing to realize that his gifts had come from God and Burbank should therefore trust in God's record of creation as recorded by Moses. He concluded by issuing a

prophetic warning: “May God have mercy on you. You havent [sic] many more summers on earth.”[424] Actually, Burbank had but one summer remaining.

A different anonymous individual mailed him not a letter but two different religious tracts in an envelope upon which someone, perhaps Burbank after having read them, wrote the word “Rotten.” The first pamphlet was entitled “A Remarkable Vision of Hell,” and told the story about a young woman in Olivet, Illinois, who attended a religious service and was struck with a personal vision into hell itself. She saw demons tormenting souls, fire, weeping, gnashing of teach, and dead soldiers continuing to fight while being tortured. One section was bracketed off in pencil, maybe by Burbank himself, to draw his attention to it: “We are living in a day when hell is regarded not as a reality, but as the product of a diseased mind.”[425] There was a large question mark in the margin next to this line; if written by the sender, it was most likely meant as a challenge to Burbank, in that only a diseased mind could envision no hell. If written by Burbank, the point most likely was that Burbank would have seen this entire vision as the “product of a diseased mind,” rather than from a rational, scientific mind, like the one he believed he possessed.

The second pamphlet was entitled “Spiritualists Say: ‘Man has not fallen.’ ‘There is no Permanent Hell.’” It listed various infidels through history – Voltaire, Thomas Paine, and William Pope, among others – and soundly condemned them for their blindness and lack of intelligence. The pamphlet writer encouraged the reader to look at the world, to see the “murder, adultery, robbery, lying, and

[424] Anonymous letter, San Francisco, California, to Luther Burbank, Santa Rosa, California, LS, 7 January 1925, LBP-LOC.
[425] Flora Reid Coate, “A Remarkable Vision of Hell.” Found in an envelope dated 5 February 1925, LBP-LOC.

beastiality [sic] of all kinds," and then deny that humanity had fallen from grace.[426] This passage was also marked in pencil, whether because it was seen as a persuasive argument against Burbank's ideas or because Burbank saw it as proof that these religious individuals were incapable of seeing the same problems that he saw. The problem was not sin. The problem was the incorrect breeding of humans that produced bad characteristics and, therefore, bad behaviors.

One of the kindest letters Burbank received from an opponent was from a doctor who took it upon herself to instruct him about certain biblical passages, as she could not "see how any one holding to this guess [evolution] can claim considerable acquaintance with the Word, and so am acting on the assumption that you are not acquainted with it." She quoted from over a dozen scriptural passages, all designed to show proof of God's creation of the universe. She also recommended one particular Bible version above all others if Burbank wanted to pursue the study further – the Scofield Reference Bible. She concluded by stating that while it may have been "presumptious [sic]" for her to have written to Burbank, yet she had "no apologies to make for the WORD OF GOD. By IT or HIM, we stand or fall."[427]

There were some letters of support besides those of condemnation. One supporter lamented the role of the "Boob McNutts of religion" who had now appeared to censor and "reform . . . All in favor of a discredited scheme of salvation." He sarcastically wondered if the time was not coming when religious

[426] "Spritualists Say: 'Man has not fallen.' 'There is no Permanent Hell,'" by the Reverend T. Smart. Found in an envelope dated 5 February 1925, LBP-LOC.
[427] Emma T. Miller, San Antonio, Texas, to Luther Burbank, Santa Rosa, California, LS, 26 May 1925, LBP-LOC.

conservatives would try to pass laws to keep Burbank from improving any of nature's plants as "the Creator's products are not subject to improvement of any sort." The sender ended by pointing out that people like him found "this wave of fanaticism very painful to the sensibilities of those who have razed long ago, their houses of superstition, [and] would now bask in the light of a new revelation."[428] The humor and sarcasm of this letter must have pleased Burbank greatly, especially since it was directed not at him but at his opponents.

If Burbank thought that the worst of his antagonistic mail had passed, he was to be sadly mistaken; it was, on some level, his own fault, as he continued to speak out concerning religious topics. In early 1926, Burbank gave an interview to a young reporter for the San Francisco Bulletin. The reporter, Edgar Waite, sought Burbank to get his reaction to comments made by Henry Ford in a different interview. Ford had expressed a belief in reincarnation, and Waite wanted to know if Burbank shared that belief with his friend. Burbank gave his frank opinion, as he was used to doing. Waite reported that Burbank did "not believe in personal resurrection, and that in his opinion, science is incompatible with the popular conceptions of reincarnation and life after death."[429] With this disbelief in a personal resurrection, a lynchpin of conservative Christian belief, Burbank signaled that he was willing to challenge those believers not just over scientific theories but over their own essential beliefs.

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[428] Thomas J. Pilkington, San Anselmo, California, to Luther Burbank, Santa Rosa, California, LS, 1 April 1925, LBP-LOC.
[429] Luther Burbank, "What Luther Burbank Thought," interview by Edgar Waite, *San Francisco Bulletin*, 22 January 1926.

Since the main purpose of the interview was to judge Burbank's opinion about reincarnation, he was quick to reject anything that had to do with it. Despite the fact that he considered Ford one of the "living geniuses" of the age, he respectfully thought Ford was wrong. Burbank did not think it possible that the universe was "big enough to contain perpetually all the human souls and the other living beings that have been here for their short span. . . . A theory of personal resurrection or reincarnation of the individual is untenable when we but pause to consider the magnitude of the idea." But if Burbank did not believe in an afterlife for the individual, he did believe that people lived on "in the spirit of the good we have done in passing through. . . . Once here and gone, the human life has likewise served its purpose. If it has been a good life, it has been sufficient. There is no need for another." This matched very well with Burbank's general work ethic; if one worked hard in life, success would come, and there was no need to look forward to a future time of rest and peace.

If the interview had ended there, Burbank probably would have been safe. While the denial of a personal resurrection would have shocked and upset some, most would have taken it in stride. Burbank, though, made four more points that combined to form a perfect storm of blasphemy. First, he praised the ancient religion of India from which the notion of reincarnation came. His familiarity with Indian visitors, workers, and scientists, and his friendship with Yogananda obviously had created a healthy respect for Hinduism within the mind of Burbank. He stated that "without doubt it is one of the most satisfying and sensible of all the religions that mankind has conceived." This statement was damning in the opinion of conservative Christians for two reasons. First, because it was praising a religion

that most would have considered idolatry. And second, because of that little expression “that mankind has conceived.” Obviously, Burbank considered all religions – even Christianity – as something invented by human beings, and to lump them all together would have offended many American Christians.

Burbank’s second inflammatory remark continued along this theme of religion in general. He argued that “all religions of the past . . . will sooner or later become petrified forms instead of living helps to mankind.” They might have begun as positive goods, but they soon deteriorated and hardened, limiting their usefulness by making people unhappy and decreasing peace. He pushed this theme even further and opined “that all religions are on a tottering foundation. None is perfect or inspired.” Science had come, and would quickly push out the superstition and irrational beliefs and behaviors that previous generations had tolerated in ignorance. Once again, this was a comment that would enrage many American Christians. Liberal biblical scholars like F. C. Baur, Julius Wellhausen, and Adolf Harnack, among others, had argued in the nineteenth and early twentieth century that Judaism and Christianity showed signs of theological development; Judaism had begun as a tribal religion and became more universal in perspective over time, while Christianity had abandoned its original purity and became a confused, bureaucratic entity far removed from what Jesus (if he had existed at all as portrayed in the literal pages of the Gospels) would have wanted for his disciples.[430] Many churches in America were struggling to come to terms with this theological perspective, often called “Higher Criticism,” and some

[430] See, for example, F. C. Baur’s *The Church History of the First Three Centuries* (1878); Julius Wellhausen’s *Prolegomena to the History of Ancient Israel* (1878); and Adolf Harnack’s *What is Christianity?* (1901).

denominations were dividing over these issues (as this was part of the debate between theological modernists and fundamentalists). Burbank was in full agreement with these more liberal ideas, as would become clear in his later "sermon" made in defense of this article.

The third infuriating comment focused on the nature of God and, once again, Burbank did not mince words. "The idea that a good God would send people to a burning hell is utterly damnable to me. I don't want to have anything to do with such a God." To be fair, this was an idea that could have been heard in almost any liberal Christian pulpit of the time. Harry Emerson Fosdick would have agreed, in full, with Burbank's statement.[431] But Burbank continued by stating what he did believe in: a "great universal power," that cannot really be understood, that "may be a conscious mind, or it may not, I don't know. As a scientist, I should like to know, but as a man I am not so vitally concerned." For Burbank, there was no hell; some kind of God existed, but he could not be known and, while humans might want to have answers, that was not a matter of great importance for how people should live their lives.

Burbank might still have avoided the greatest amount of controversy had he not said something about Jesus Christ almost guaranteed to be infuriating. Christ "has been most outrageously belied," Burbank stated, as Christ's unworthy followers (theologians and church officials) "have so garbled his words and conduct that many of them no longer apply to present life." Once again, this was an idea that some liberal scholars would have agreed with, at least in part; but Burbank did

[431] Fosdick's famous sermon from 1922, *Shall the Fundamentalist's Win?*, rejected the notion that Christians must accept a traditional view of the Atonement, of which a belief in an eternal hell of punishment for the damned was a part.

not end there. He went on by calling Christ "an infidel of his day because he rebelled against the prevailing religions and government. I am a lover of Christ as a man, and his work and all things that help humanity, but nevertheless, just as he was an infidel then, I am an infidel today." Of all the words that Burbank could have chosen to describe himself, none could have been as dangerous as "infidel;" it invoked images of the great agnostic Robert Ingersoll, and all of the problems he had caused the American churches after the Civil War.[432] To make matters worse, he applied the term to Christ as well as himself, with the implication that the current religious leaders would reject Christ just as the Jewish leaders of his own time had.

Burbank concluded the interview by stating that "I do not believe what has been served to me to believe. I am a doubter, a questioner, a skeptic. When it can be proved to me that there is immortality, that there is resurrection beyond the gates of death, then will I believe. Until then, no." In essence, Burbank had faith in the physical things of nature that he could see, study, and improve. If anyone wondered if Burbank still harbored any teachings from his Baptist youth, it would appear that the answer was no.

As one would expect, reports of Burbank's interview spread quickly around the country. Within twenty-four hours, newspapers in Los Angeles, Chicago, New York, Boston, and Washington, for example, either repeated the salient questions from the interview or reprinted the entire article.[433] With this kind of coverage, it

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[432] For the use of the term "infidel" in the debates of the nineteenth century, see Martin E. Marty, *Infidel: Freethought and American Religion* (Cleveland: Meridian Books, 1961). For a helpful and recent study of Robert Ingersoll, see Susan Jacoby, *The Great Agnostic: Robert Ingersoll and American Freethought* (New Haven: Yale University Press, 2013).

[433] *Los Angeles Times*, "Burbank Says He's Infidel," 23 January 1926, 2; *Chicago Tribune*, "Burbank Says He's An Infidel," 23 January 1926, 14; *New York Times*,

was no surprise that negative letters were soon to follow. One minister pointed out to Burbank that other infidels like Voltaire had predicted the same thing two centuries before, and Burbank would be proven wrong as Voltaire was. On an interesting note, he praised Burbank for his work with plants, and admitted that he also had worked with and developed some of his own, and thought that Burbank could teach him a great deal more in that area. But, Burbank's "knowledge of plant science does not necessarily make you a criterion of things divine." On the contrary, because theology was not Burbank's realm of expertise, "does it not occur to you that those who have made a life study of divine things may know something others do not know?" He did not appear to begrudge Burbank his opinion, but he was upset that the "thoughtless" or weak in faith might be led astray by Burbank's words; but for those who had studied theological matters and truly understood their faith, Burbank's thoughts would have no effect. He concluded his letter by "sympathize[ing] with you if you are sincere in your statements (if rightly quoted) because I know it must be sad to come down to the end of life with no light to guide, no hand to comfort, no God to satisfy—that is hell, even if there were no other. It is sad to think that one who has done so much to help others must close his life in the shadows of doubts and uncertainty."[434] This letter, by far, was tame in comparison to others that would be received over the next couple of months.

There were some letters of support. One writer praised Burbank for his many years of faithful work by stating that "if all your critics put together had done a

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"Burbank an Infidel 'In the True Sense,'" 23 January 1926, 2; *Boston Daily Globe*, "Burbank Brands Himself Infidel," 23 January 1926, 1-2; *Washington Post*, "Burbank Declares Himself Infidel; Calls Christ One," 23 January 1926, 3.

[434] Reverend Claude Shryock Tritt, West Frankfort, Illinois, to Luther Burbank, Santa Rosa, California, LS, 23 January 1926, LBP-LOC.

small per cent of what you have done for humanity, we would listen to them with respect. As it is, they are not entitled to much." He referenced a verse from the Bible that people would be known by their works,[435] and encouraged Burbank that his works had revealed his true nature to the world. This supporter concluded by telling Burbank that he would not have written at all, except he had seen that Burbank had been elevated to the highest level of the Scottish Rite freemasons, and wanted to congratulate Burbank on that achievement and to make sure that he knew "that the people are with you and for you, regardless of what a few narrow minded 'ministers and priests' may say and do."[436]

There were also letters of support from people even further out on the religious fringe than Burbank. One such letter came from a self-proclaimed "Christian Metaphysician, Teacher and Healer" in California who accepted all of Burbank's ideas except his disbelief in an afterlife, especially reincarnation, which he saw as an original and essential teaching of ancient Christianity. In discussing death, he wrote that "we lay off a suit of clothes that thru our ignorance and misuse of we hav [sic] worn out faster than our sub-conscious bilding [sic] faculties hav [sic] been abl [sic] to restore." In fact if, in one's death, there was any business left unfinished or any imperfections in one's character they "will hav [sic] to continu [sic] to come back here to erth [sic] thru rebirth until we hav [sic] lernd [sic] and so purified our desires."[437] He went on to praise the Catholic idea of purgatory, and saw time spent on earth as a time of purgation of evil to prepare one's heart, body,

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[435] Matthew 7:16.
[436] W. B. Sadilek, Schuyler, Nebraska, to Luther Burbank, Santa Rosa, California, LS, 26 January 1926, LBP-LOC.
[437] Reverend John Murray, Soldier's Home, California, to Luther Burbank, Santa Rosa, California, LS, 25 January 1926, LBP-LOC.

and soul for existence in heaven. It is unlikely that Burbank would have been swayed by any of this argument; in fact, the almost constant misspellings and grammatical errors and peculiarities would have ensured some kind of whimsical comment from Burbank. There is no record that Burbank ever replied to this message or that he heard from the man again.

Besides the hundreds of letters of praise or condemnation, there were also letters from ministers and civic leaders offering up their pulpits or lecture halls so Burbank might defend his statements or elaborate upon his views. After some deliberation, Burbank finally chose to speak in the First Congregational Church of San Francisco at the eleven o'clock service on Sunday morning, January 31, 1926. The minister was thankful that Burbank had accepted his request, as "thousands of people are interested to know your particular views with reference to the subject of God, Nature, and Immortality." The minister would provide a car to ensure that Burbank arrived on time and in comfort.[438]

The morning in question arrived, and Burbank stood in front of a crowded sanctuary of over two thousand eager listeners. The speech was not long by the standards of the time, but it was obvious that Burbank was nervous. But in slow, methodical fashion, he made his way through his planned remarks. As it was the last speech that Burbank ever gave, it will be reprinted here in full.

> I love everybody! I love everything! Some people seem to make mistakes, but everything and everybody has something of value to contribute or they would not be here.
>
> I love humanity, which has been a constant delight to me during all my seventy-seven years of life; and I love flowers, trees, animals and all the works of Nature as they pass before us in time and space. What a joy life is when you have made a close working

[438] Reverend James L. Gordon, San Francisco, California, to Luther Burbank, Santa Rosa, California, LS, 27 January 1926, LBP-LOC.

partnership with Nature, helping her to produce for the benefit of mankind new forms, colors, perfumes in flowers which were never known before; fruits in form, size, color and flavor never before seen on this globe; and grains of enormously increased productiveness, whose fat kernels are filled with more and better nourishment, a veritable storehouse of perfect food for all the world's millions for all time to come.

All the things—plants, animals and men—are already in eternity traveling across the face of time, whence we know not, whither who is to say. Let us have one world at a time and let us make the journey one of joy to our fellow passengers and just as convenient and happy for them as we can, and trust the rest as we trust life.

Let us read the Bible without the ill-fitting colored spectacles of theology, just as we read other books, using our own judgment and reason, listening to the voice, not to the noisy babble without. Most of us possess discriminating reasoning powers. Can we use them or must we be fed by others like babes?

I love especially to look into the deep, worshipful, liquid eyes of Bonita, my dog, whose devotion is as profound and lasting as life itself. But better yet, I love to look into the fearless, honest, trusting eyes of a child who so long has been said by theologians to be conceived and born in sin and pre-damned at birth. Do you believe all our teachers without question? I cannot. We must "prove all things" and "hold fast to what is good."

What does the Bible mean when it distinctly says, "By their fruits ye shall know them?" Works count far more than words with those who think clearly.

Euripides long ago said, "Who dares not speak his free thought is a slave." I nominated myself as an "infidel" as a challenge to thought for those who are asleep. The word is harmless if properly used. Its stigma has been heaped upon it by unthinking people who associate it with the bogie devil and his malicious works. The devil has never concerned me, as I have always used my own conscience, not the dictum of any cult.

If my words have awakened thought in narrow bigots and petrified hypocrites, they will have done their appointed work. The universal voice of science tells us that the consequences fall upon ourselves here and now, if we misuse this wonderful body, or mind, or the all-pervading spirit of good. Why not accept these plain facts and guide our lives accordingly? We must not be deceived by blind leaders of the blind, calmly expecting to be "saved" by anyone except the Kingdom within ourselves. The truly honest and brave ones know that if they are to be truly saved it must be by their own efforts. The truth hurts for a while as do the forceps that remove an old, useless tooth, but health and happiness may be restored by the painful removal of the disturbing member.

> My mother, who lived to the ripe old age of ninety-seven years, used very often in my boyhood and youthful days to say, "Luther, I wish you to make this world a better place to live in than it was before you lived." I have unfailingly tried all my own long life to live up to this standard. I was not told to believe this or that or be damned.
>
> I reiterate: The religion of most people is what they would like to believe, not what they do believe, and very few stop to examine its foundation underneath. The idea that a good God would send people to a burning hell is utterly damnable to me—the ravings of insanity, superstition gone to seed! I don't want to have anything to do with such a God. I am a lover of man and of Christ as a man and his work, and all things that help humanity; but nevertheless, just as he was an infidel then, I am an infidel to-day. I prefer and claim the right to worship the infinite, everlasting, almighty God of this vast universe as revealed to us gradually, step by step, by the demonstrable truths of our savior, science.
>
> Do you think Christ, or Mohammed, Confucius, Baal or even the gods of ancient mythology are dead? Not so. Do you think Pericles, Marcus Aurelius, Moses, Shakespeare, Spinoza, Aristotle, Tolstoi [sic], Franklin, Emerson are dead? No. Their very personality lives and will live forever in our lives and in the lives of all those who follow us. All of them are with us to-day. No one lives who is not influenced, more or less, by these great ones according to the capacity of the cup of knowledge which they bring to these every-flowing fountains to be filled.
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> Olive Schreiner says: "Holiness is an infinite compassion for others; greatness is to take the common things of life, and walk truly among them.
>
> All things on earth have their price; and for truth we pay the dearest. We barter it for love and sympathy. The road to honor is paved with thorns, but on the path to truth at every step you set your foot down on your own heart.
>
> For that little soul that cries aloud for continued personal existence for itself and its beloved, there is no help. For the soul which knows itself no more as a unit, but as a part of the Universal Unity of which the beloved also is a part, which feels within itself the throb of the Universal Life—for that soul there is no death."[439]

Burbank refused, in this speech, to back down from the more controversial aspects of his original published interview. He argued for reading the Bible like any other

[439] Luther Burbank, speech before the First Congregational Church, San Francisco, 31 January 1926, LBP-LOC. Also reprinted in Frederick W. Clampett, *Luther Burbank: "Our Beloved Infidel" His Religion of Humanity* (Westport: Greenwood Press, Publishers, 1970), 38-41.

book and ignoring the superstitious harpings of ministers, critiqued the notion of hell (and the God who would send people there), and reiterated his belief that Christ was an infidel – and only a man – just like Burbank himself. Science pointed the way to salvation, but it was a salvation left up to the individual, and was for this life only. The individual must treat the body and mind with respect, and treat others the same. Burbank also claimed, in his speech, that he had deliberately chosen the word "infidel" to wake people up and enliven the debate. It is highly unlikely that was his original intention, but based on the reactions that spewed out after his initial interview it was a reasonable rationalization.

Responses to his well-covered speech were soon arriving in his mailbox daily. One angry letter writer began "Some men make asses of themselves when they are young and some when they are 77 years old. The braying you have been doing recently is a pathetic attempt at a genuine hee-haw . . . to tear down a people's faith and hand them a few of your freak fruits & flowers." The most dangerous person on the planet, he continued, was a supporter of evolution, drunk on his own theory. For all of Burbank's achievements, they were not very practical; for all his speeches, writings and opinions, they were not very helpful. "No one is sending babies to hell, but I have seen quite a number in a hell of a fire, and holding your flowers to their nose wouldn't help them any." He ridiculed the opening lines of Burbank's speech by saying that he was "delighted to know that you 'love every body' from Judas Iscariot to Leopold & Loeb, from rats & rattlesnakes to the very worms that will presently play hide & seek in your skull and mine." He concluded his letter by stating that "one Bryan is worth a million Burbanks to any world, and the Bible will be doing business when you and your

flowers are blowing down the years. . . . Sorry for you."[440] Another writer almost shouted at Burbank, "You will be held responsible for your statement. You have set aside the Bible, made the God of the Bible a liar, and made Jesus Christ an imposter. Thus you declare you yourself to be a heathen. It is too bad you have so little sense."[441] The combination of frightful images, abuse, and the condescension towards Burbank's accomplishments had to have left a bitter taste in Burbank's mouth.

There were, however, numerous letters of support. One supporter in New York City enclosed a copy of a letter that he had sent to his local newspaper after it published an article critiquing Burbank. The editorial said that Burbank should have kept his opinion to himself, that there were a great deal more religious people in the world than irreligious, and that Burbank was not an astronomer (and, hence, could not guess how large the universe actually was to say that the reincarnated or reborn souls of all humanity could not fit in it). The letter writer responded by pointing out that if everyone kept quiet about the truth, then there would have been no scientific discoveries made in the past (like those of Copernicus and Galileo). He argued that the sheer number of believers was irrelevant; what mattered was the brainpower of those involved, and he believed that "it takes a considerable amount of thought to become an Infidel, Atheist, Agnostic, or Freethinker, while none – comparatively little – is necessary to accept the dogmas which have been inherited from grandfather to father to son." He concluded by quoting one of the mottos of that newspaper was "An honest man is the noblest work of God." He

[440] D. Thomas, Brayville, Mississippi, to Luther Burbank, Santa Rosa, California, LS, 1 February 1926, LBP-LOC.
[441] Anonymous, Keokuk, Iowa, quoted in Clampett, *Beloved Infidel*, 46-47.

believed Burbank was one of those honest men, “and it is a blot on our civilization that more scientists, editors, educators and clergymen are not.”[442]

Another short letter praised him because the country needed “a complete clean out of all the ‘hokum,’ substitute instead tolerance, brotherly love – in short, a culture of sound ethics.”[443] A journalist thanked him for his courageous speech, and pointed out that the “Bible, it would seem, is the only work that has not been revised, reedited, but remains steeped in the prejudices, ignorance and superstitions of the barbaric age when it was written.”[444] Another writer, this one a businessman, felt that Burbank’s speech would be a great help to the young people of America, even if the “old religious fossils wills scoff at you, but the young minds of America will catch your logic.” The businessman said that he had been a freethinker for the last fifteen years, but implied that he had not had the courage Burbank had to reveal his views.[445]

Another writer encouraged Burbank to have his speech published, to add more depth and explanatory notes, to broaden the audience, and to continue the debate. This was an important exercise, he argued, because “we must recognize that the world is not prepared yet for impartial unselfishness. Error and intolerance, coming from ignorance, is engrained in our very fibre.”[446] Only time would improve

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[442] Frederick Boyd Stevenson, New York City, New York, to the *Brooklyn Eagle*, Brooklyn, New York, LS, 1 February 1926, LBP-LOC.
[443] Daniel S. Darab, New York City, New York, to Luther Burbank, Santa Rosa, California, LS, 1 February 1926, LBP-LOC.
[444] Franklin B. Morse, San Francisco, California, to Luther Burbank, Santa Rosa, California, LS, 2 February 1926, LBP-LOC.
[445] J. E. Meyers, Minneapolis, Minnesota, to Luther Burbank, Santa Rosa, California, LS, 6 February 1926, LBP-LOC.
[446] T. H. McLemore, Elk City, Oklahoma, to Luther Burbank, Santa Rosa, California, LS, 4 February 1926, Luther Burbank Papers, Manuscript Division, Library of Congress, Washington, D.C.

the situation and only leaders like Burbank could drag others out of the swamps of ignorance. Another thanked him for his "progressive religious ideas," especially in attacking the Bible, as there were "books much more advanced than the bible [and] better fitted for our time, [and] easier understod [sic]."[447] Another proclaimed that Burbank's attack on hypocrisy did him "more good than any thing I ever read in the daily newspaper. People may do something for themselves, when they no longer depend on a supernatural god."[448] Burbank even received a letter from a relative back in Massachusetts, who congratulated Burbank on his good health and successful work. He also wanted to let Burbank know that "I fully agree with you in regard to the future state of humanity though it is quite contrary to the teaching you and I received in the old Pleasant Street Baptist church in Worcester."[449]

Another supporter wrote both to praise Burbank and encourage him to continue speaking his mind. "Big Men like you and Men who are making big success in this world ought to come out with the Truth, and help the people, Enlighten us with what you know." Those who have been attacking Burbank will be sorry to have done so, but Burbank must "try and get other great Men to do some talking on the same Subject, make them come out above board."[450] This same letter writer had included numerous theological ideas, but he also included a

[447] Henry J. Frey, Pittsburg, Pennsylvania, to Luther Burbank, Santa Rosa, California, LS, 8 February 1926, LBP-LOC.
[448] A. B. Clark, Dyerville, California, to Luther Burbank, Santa Rosa, California, LS, 9 February 1926, LBP-LOC.
[449] Alfred J. Ross, Boston, Massachusetts, to Luther Burbank, Santa Rosa, California, LS, 19 March 1926, LBP-LOC.
[450] C. W. Westendorff, Charleston, South Carolina, to Luther Burbank, Santa Rosa, California, LS, 5 February 1926, LBP-LOC.

pamphlet for Burbank to consider entitled “The Baha’i Revelation.” This pamphlet declared that the

> The Baha’i Message is a call to religious unity and not an invitation to a new religion, not a path to immortality, God forbid! It is an ancient path cleared of the debris of imaginations and superstitions of men, of the debris of strife and misunderstanding and is again made a clear path to the supreme seeker, that they may enter therein in assurance, and find that the word of God is one word, though the speakers were many.[451]

Burbank might have been greatly interested in the Baha’i faith, but he would be too consumed with a different work to respond right away.

Burbank also received a heartbreaking letter from a poorly-educated working mother in Los Angeles. She wrote to confirm that she also had a hard time believing in a God who would “place us in Eternal torment I feel like I sure have all the Punishment I need here on Earth.” She was a widow, with a ten-year old son that she had to send to a home for boys because she could not care for him and work, and he grew too lonely staying by himself all day. She wished she could work at Burbank’s gardens, as opposed to her current place of employment, the Polly Anna Tea Room, which was “verry [sic] unpleasant conditions as I work with Collored [sic] People.”[452] While the letter may have touched his heart, there was little time for Burbank to respond to this woman’s pleas.

The month of February saw Burbank wading through letters with his friend, Frederick Clampett. Clampett was a former minister, and he and Burbank worked out a plan to put on paper Burbank’s thoughts about religion to be published later.

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[451] From the pamphlet “The Bahai’i Revelation,” attached to the above letter, page 16, LBP-LOC.
[452] A. M. Renfron, Los Angeles, California, to Luther Burbank, Santa Rosa, California, LS, 21 March 1926, LBP-LOC.

This was encouraged by many, not the least of whom was their mutual friend Jordan, who advised them to focus solely on religion (rather than on scientific matters), to help guide the country along during these chaotic times.[453] The Sunday editor of the New York Times sent a questionnaire to both Burbank and Edison, in the hopes that Burbank would answer and expand his views and that Edison would weigh in on these weighty subjects. The questionnaire asked five questions:

1. Does science present any facts that make impossible a belief in immortality?
2. Has science proved that a scientific understanding and a religious belief are incompatible?
3. What do you believe to be the purpose of man on earth and what [is] his place in the universe?
4. Do you believe man has reached the probable limits of mind development, or do you believe his intelligence will grow to new limits?
5. Does the theory of evolution—in your opinion—account for man's spiritual aspirations?

The expectation was that the *Times* would print Burbank's answers to these questions, and then newspapers throughout the country would reprint his responses.[454] Somehow, either through a book with Clampett or through something such as an article in the *Times*, people wanted more and Burbank was willing to provide it.

He was just not able. Burbank was determined to go through each letter, reading them carefully, whether they were from a supporter or from a detractor. Some of them he determined were worthy of a personal reply, especially those that came from young people who felt confused about their lack of faith but sought

[453] David Starr Jordan, to Luther Burbank, LS, 1 March 1926, LBP-LOC.
[454] Lester Markel, New York City, New York, to Luther Burbank, Santa Rosa, California, LS, 5 March 1926, LBP-LOC.

comfort from Burbank and his ideas.[455] From his initial interview at the end of January until his illness towards the end of March Burbank read nine thousand personal letters dealing with his beliefs, which averaged out to over 150 a day.[456] Clampett could tell that the stress of the situation was having a negative effect on Burbank, who was more used to working in the fresh outside air but now found himself indoors, overwhelmed by the amount of responses he needed to make.[457] The friends spent two months discussing any aspect of religion that came to either of their minds, as well as the many issues brought up by the thousands of letters, in preparation for the book that Clampett would help put together.

Burbank would never see the finished product. He had a heart attack on March 24, 1926; immediately, word went out on the wires that the great man was ill. More support poured in, and advice was given; while Burbank seemed to recover initially, by April things had gotten worse. Dr. Kellogg, Burbank's health reforming friend, sent a telegram to give his medical advice for how to return the now-ailing Burbank to vitality:

> WOULD ADVISE CONSIDERATION OF INTRAVENOUS INJECTION OF GLUCOSE TRANSFUSION CARBOHYDRATE FEEDING INSULIN ABUNDANT INTAKE OF FLUIDS ESPECIALLY ORANGE JUICE CLEARANCE OF COLON WITH REPEATED ENEMAS TEMPERATURE ONE HUNDRED TEN DEGREES FOOD INTATE NOT LESS THAN 2000 CALORIES MORE IF POSSIBLE CONSISTING CHIEFLY OF FRESH FRUITS AND VEGETABLES ESPECIALLY GREENSTUFFS SUNBATH OXYGEN INHALATION AND DIATHERMY IN LARGE DOSES TO SPINE AND ABDOMEN AVOID MEATS AND MEAT BROTHS USE FATS SPARINGLY[458]

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[455] Clampett, *Beloved Infidel*, 45.
[456] Clampett, *Beloved Infidel*, 44.
[457] Clampett, *Beloved Infidel*, 52.
[458] John Harvey Kellogg, Battle Creek, Michigan, to Luther Burbank, Santa Rosa, California, Telegram, 9 April 1926, LBP-LOC.

Despite all the medical care and advice given (and there is no proof that Kellogg's regimen was attempted), Burbank slipped into a coma and passed away shortly after midnight on April 11. He had lived a busy seventy-seven years, and while the pressures of the previous two months might not have actually killed him, they could not have helped. Now American society would have to decide how to honor the memory of Burbank, while others worked to ensure that his contributions to science would be remembered as well.

Chapter 6: Conclusion: An Unfortunate Fading from View

Burbank's death brought tributes from around the country and overseas. James Phelan, the former mayor of San Francisco and Senator from California, said that "California has lost its greatest citizen."[459] D. N. Borodin (the director of the Russian Agricultural Agency in America) offered "our sincerest condolences in behalf of the Agricultural Institutions and Scientists of the Union of Soviet Socialist Republics in your bereavement the world has suffered one of its greatest losses."[460] Gorbounov and Vavilov (President and Director of the Intitut [sic] of Applied Botany in Leningrad) also sent their condolences, saying that Luther Burbank was "highly esteemed in USSR."[461] Vavilov was Nikolai Ivanovich Vavilov who had done much to improve Soviet agricultural products and visited Burbank in California in 1921. Vavilov would eventually come into conflict with and be executed by Trofim Lysenko over the issue of inherited characteristics. Vavilov was a proponent of Mendelism, while Lysenko supported Lamarckianism, and Lysenko won out.[462]

Three Japanese luminaries sent telegrams. Viscount Goto Shinpei, businessman, politician, and member of Takushoku University, sent his condolences.[463] So too did Hoshi Hajime, operator of the largest chain of drug stores in Japan.[464] Not only did Nobumi Hasegawa send his condolences, but he also wired $20 for the purchase of a flower garland in memorial to Burbank.[465]

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[459] Telegram dated 13 April 1926, LBP-LOC.
[460] Telegram dated 19 April 1926, LBP-LOC.
[461] Telegram dated 19 April 1926, LBP-LOC.
[462] Dreyer, *Genius*, 265-266.
[463] Telegram dated 17 April 1926, LBP-LOC.
[464] Telegram dated 13 April 1926, LBP-LOC.
[465] Telegram dated 11 April 1926, LBP-LOC.

Belgium also got involved, including condolences from “Reychler Snicholaswaes”,[466] and the Belgium Ambassador to the United States wired to let the grieving Elizabeth know that “His Majesty King Albert has asked me to forward to you his sincere sympathy in your great loss.”[467]

In total, the family kept eight personal letters written in the immediate aftermath of Burbank’s death; four of them contained poems commemorating Burbank. There were also sixty total telegrams saved, from politicians, ministers, teachers, scientists, and farmers. If there were messages of condemnation at this point, they were not saved.

Unfortunately, there was little time to grieve, and this gets at, perhaps, the first part of Burbank’s slip into historical irrelevance. Due to the nature of Burbank’s work – and the basis of his modest wealth – a decision would have to be quickly made about what to do with his plant projects, and the lands themselves. For a short time, the work could be carried out by Burbank’s long-time assistant, Will Henderson. Henderson knew the grounds, performed some of the pollination and grafting projects, and was aware of all the experiments Burbank was working on, but it had always been Burbank alone who made the decisions about what to keep and what to destroy. He entrusted those crucial decisions to only his judgment. This was, after all, part of his mystique – the genius who could tell just by looking at a seedling the quality of the plant that would be produced.

In the days after Burbank’s death, there was a flurry of letters between the President of Stanford University and Elizabeth. Just nine days after Burbank’s

[466] Telegram dated 17 April 1926, LBP-LOC.
[467] Telegram dated 17 April 1926, LBP-LOC.

death, Ray Wilbur proposed to purchase the entirety of Burbank's property and all of the plant experiments under operation from Elizabeth. This was not a surprise proposal; Burbank had talked for years about how turning the property over to Stanford would be the ideal situation for continuing his work after his death. Burbank's house, gardens, and farm would become a "Research Station," operated entirely by Stanford. In order to "measure up to the very high standard set by him," Stanford would endeavor to raise one million dollars for this project.[468] An agreement was signed between the two shortly thereafter to work towards this aim.[469] Soon, a more detailed, sixteen-page proposal to create the "Luther Burbank Foundation in The Leland Stanford Junior University of California" to continue his work for years to come – once the endowment of a million dollars was raised, of course.[470]

Wilbur checked back in with Elizabeth in July to make sure she was still on board with the plan, and to inform her that the Board of Trustees for Stanford had approved the plan. They believed that they should have an answer on the endowment question no later than February of the new year.[471] Things appeared to be moving very, very slowly, however, as a last letter from Wilbur in September seemed to indicate. Stanford was still working on raising the necessary endowment, but Elizabeth had proposed a smaller alternative in the meantime – instead of purchasing everything, Stanford could purchase his main house in Santa

[468] Ray Lyman Wilbur, Stanford University, to Elizabeth Burbank, Santa Rosa, TLS, 20 April 1926, LBP-LOC.
[469] Contract, TS, 22 April 1926, LBP-LOC.
[470] Proposal, T, undated, LBP-LOC.
[471] Ray Lyman Wilbur, Stanford, to Elizabeth Burbank, Santa Rosa, TLS, 12 July 1926, LBP-LOC.

Rosa and the small acreage there, and the larger farm nearby could be sold to someone else. Wilbur appeared to like this idea, and planned on proposing it Stanford officials for more discussions.[472]

One more catalog of Burbank seeds and plants was released under the guidance of Henderson and some of Burbank's friends. The message on the inside cover was headlined as "Carrying On for Luther Burbank," but the text said "No one can 'carry on the work of Luther Burbank.'" At least, no one person could, for the catalog proudly announced that Stanford had made arrangements to purchase the lands and would soon be taking over the experiments as soon as the money could be raised.[473]

None of these plans came to fruition. Wilbur was unable to raise the endowment to create the Luther Burbank Foundation and continue on Burbank's experimental work. Neither did Stanford purchase the Santa Rosa home and gardens, although if that was because Elizabeth decided to continue living there is hard to say at this time. So the chance at Burbank's work being continued and expanded by a major research university, perhaps solidifying Burbank's scientific reputation in the process, fell by the wayside.

Perhaps Elizabeth with Henderson's help would be able to continue the work, but it did not help that they could not get along. Perhaps Henderson wanted to continue the work, and was upset that Elizabeth was so quick to sell. In any case, Henderson was soon fired, and the Stark Brothers Nurseries and Orchards Company bought out the plant experiment side of the business. Over the next few

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[472] Ray Lyman Wilbur, Stanford, to Elizabeth Burbank, TLS, 27 September 1926, LBP-LOC.
[473] *New Creations in Fruits and Flowers*, 1927 edition, LBP-LOC.

years, Stark Brothers released products under the Burbank name that supposedly came from these purchases.[474] There are few that continue to be sold by them today, such as the July Elberta Peach Tree,[475] the Elephant Heart Plum,[476] the Santa Rosa Plum,[477] and, perhaps most famously for fruit, the Snowbank White Blackberry.[478] The Red Ace Plum and the Van Deman Quince were still listed on their website, but neither was available any longer.[479]

But the prosperity of these nurseries who continued to market Burbank products might not have been successful without the passing, finally, of a plant patent bill by Congress. Burbank had personally lobbied for such a bill for years, although he appeared to be torn in to how a plant patent might be enforced. “Unlike the chemist, the mechanic, and the author who can obtain a patent or copyright on any unique combination, no patent and no copyright protects the originator of any new plant.”[480] Perhaps he was thinking of rival businessmen who found ways to deconstruct his plants and bring out their own, similar varieties, not too soon after he had released his originals. This was the primary reason why Burbank had

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[474] Dreyer, *Genius*, 277.
[475] https://www.starkbros.com/products/fruit-trees/peach-trees/burbank-july-elberta-peach, accessed 28 September 2022.
[476] https://www.starkbros.com/products/fruit-trees/plum-trees/burbank-elephant-heart-plum, accessed 28 September 2022, although this product was identified as sold out, one could be added to their email list to be notified when it became available again.
[477] https://www.starkbros.com/products/fruit-trees/plum-trees/santa-rosa-plum, accessed 28 September 2022, although unlike all the others, strangely enough, it was not designated a Burbank product.
[478] https://www.starkbros.com/products/berry-plants/blackberry-plants/snowbank-white-blackberry, accessed 28 September 2022.
[479] https://www.starkbros.com/products/fruit-trees/plum-trees/burbank-red-ace-plum, and https://www.starkbros.com/products/fruit-trees/quince-trees/van-deman-fruiting-quince, accessed 28 September 2022.
[480] *Protection for Plant Originators: The Tragedy of the Work*. Undated manuscript, LBP-LOC.

always resisted keeping too many records and being too public with his actual processes. Scientists might demand access to the work in order to test the findings and replicate the work in their own labs, but to do so would destroy the ability of Burbank to make a living – he could not rely on the support of a university or a government agriculture station. All his funding came from his own difficult work.

But in a letter written to the *National Nurseryman* Burbank stated that "slight variations are constantly appearing among the standard varieties of fruits and other plants, and every seedling is a variation." In other words, Nature herself produced variations, and how could one tell if another's variety was stolen or legitimately produced? Instead of pushing for a direct plant patent, Burbank here argued for a truth-in-advertising kind of law. Inventors like Burbank could give a plant product a unique name, and others would be forbidden by law of using similar names to sell inferior products and thereby confuse and anger consumers.[481]

It would take four more years after Burbank's death before a plant patent came into being, and in fashion typical for Burbank, it is dramatic. Though many of the largest nurserymen of the time supported a patent bill (like the Stark Brothers), the bill had serious opposition in the House, led by Fiorello La Guardia of New York, that was able to stall even debate on the bill. Finally, Fred Purnell of Indiana asked La Guardia if he knew of Burbank, and if yes, what his opinion of him was. La Guardia responded that Burbank was a great man. Purnell then read into the Congressional record a letter from Burbank to Stark arguing just for such a patent.

[481] Luther Burbank, TL, October 1904, LBP-LOC. For humor's sake, one Christmas I purchased what I thought was the famous table-top game "Settlers of Catan" for my children. Instead I purchased a Bible-themed "Settlers of Canaan" game, which was not even close to being as good.

La Guardia removed his opposition, and the bill passed into law in 1930.[482] Purnell informed Elizabeth by telegram that the bill was now law, and she responded back, saying “although it comes too late for it to have made Luther Burbank’s road easier and his service to humanity greater the joy of this would not have been less to him stop Those whose lives are given over to scientific achievement do not think in terms of an individual lifetime.”[483]

And Elizabeth was exactly right. Although Burbank was posthumously awarded some patents, it was too late for him to enjoy the security that patents could bring. And with no one carrying on in his name, and no business either, Burbank lacked something that Henry Ford and Thomas Edison both had – a corporate legacy. There was only so much that others could do marketing products under Burbank’s name, flowers and plants that grew less impressive over time as new varieties appeared that had flashier colors or larger, better tasting fruit. Without a living and active Burbank, producing an endless array of plant varieties, it was natural for the name of Burbank to drift into obscurity among only the most dedicated gardeners and horticulturists.

Another reason is revealed in the memoir of David Fairchild, a university trained botanist and friend of Burbank. He had played a role in the Carnegie grant to support Burbank’s work that ended in anger and resentment. Fairchild discussed his global travels, including the discovery of some spineless cacti that he had found from four locations – Argentina, Sicily, Ceylon, and Tunis – and the samples from each that he had sent back to Burbank. When he returned to the United States in a

[482] Dreyer, *Genius*¸281-283.
[483] Undated telegram, LBP-LOC.

couple of years, he saw that Burbank had announced his introduction of a spineless cactus, without acknowledging where they might have come from and even that there were others in the world. This disillusionment stayed with Fairchild for years, although he was still willing to recognize that Burbank did some good, important work, even if it could not strictly be considered scientific. In a very significant passage, Fairchild writes "one might describe Burbank as like Tolstoi, in that, when one was with him, one felt the strange force of his simplicity and his profound confidence in his own abilities. But, on leaving him, the impression faded, and one began to wonder wherein lay his power, for his results did not quite seem to justify his claims."[484] Burbank did seem to have exactly that kind of personality – charming and engaging when with him, but some of the luster was lost once not in his presence.

If his memory and importance were to fade in these areas, his importance in the scientific community would dwindle rapidly. One examination of his work by O. F. Cook of the Bureau of Plant Industry briefly outlined Burbank's life and work, which he considered important. But what Cook criticized the most was the "prospect of a Burbank cult" that had sprung up in the years after his death due to the publication of his last speech and religious views. It was too much to accept that such a person would now be looked at as a religious figure.[485] In similar fashion, a retired professor of pomology from the University of California would publish an extensive article examining, once again, his life and works, to strip away

[484] David Fairchild, *The World was My Garden: Travels of a Plant Explorer* (New York: Scribner's Sons, 1938): 265.
[485] O. F. Cook, "Saint Luther: A Burbank Cult, with an Account of and his Wonder-Working Methods of Plant Breeding," *Journal of Heredity* 20 (1930): 309-318.

the mythology that had developed and get at the real Burbank.[486] Once again, what is revealed is an innovator and a very kind man, but not really a scientist.

A modern historian has, perhaps, summed up this debate in succinct fashion: “Burbank conducted research, but not at a scientific institution; he claimed to have knowledge of nature’s laws, but did not possess a university degree; he produced experimental results, but they were offered for sale rather than for scholarly publication.”[487] Since all of these came to be the ways in which scientists identified themselves, Burbank was eventually left out of this characterization.

There have been some signs of a scientific renewal of interest in Burbank, however. The American Society for Horticultural Science devoted their conference of 2015 to studying Luther Burbank, “the most famous American Horticulturist.”[488] Papers were given on Burbank himself, his potato, his flowers, his plums, his walnuts, and his berries. Perhaps with more time the work of Burbank will be reevaluated by others who were quick to dismiss his work due to the scandal and hyperbole involved with his products.

With his strong support of evolution, it seemed unlikely that religious conservatives would continue to think about Burbank, and it would appear that they did not. Liberal Christians still sometimes spoke and wrote about it, like one minister did in Santa Rosa in 1949. The Reverend Graydon McClellan delivered his message at the First Presbyterian Church of Santa Rosa as a part of the Luther

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[486] Walter O. Howard, “Luther Burbank: A Victim of Hero Worship,” *Chronica Botanica* 9 (1945): 301-506.
[487] Katherine Pandora, “Knowledge Held in Common: Tales of Luther Burbank and Science in the American Vernacular,” *Isis* 92 (2001): 484-516.
[488] Jules Janick, “Introduction to the Workshop,” *Horticultural Science* 50 (February 2015), 152.

Burbank Centennial, celebrated by the town in Burbank's honor. McClellan wanted to clear up some confusion for his audience and so also reveals how the legacy of Burbank's religious thoughts had been softened over time.

McClellan had three major points. First, was that Burbank failed to understand organized religion, and organized religion failed to understand Burbank. But that was because neither saw the other clearly. Traditional beliefs helped lead some people to God, but so too does skepticism lead some people to God. Both are necessary.[489]

Second, Burbank's questions and provocative statements led many within the church to reevaluate their own faith, and that was always a good thing. It also forced people to rethink education, and to challenge the limits placed on the teaching of science, especially the theory of evolution.[490] There were many more conservative Christians throughout the United States who would have greatly disagreed with this point.

Finally, he argued that Burbank was "a very religious person" even if he was not strictly a Christian. He showed the spirit of love (a fruit of the Spirit, none the less), so even if his ideas about Christ and the Church might not have been completely accurate, McClellan had no doubts that Burbank could be found in heaven with his "loving heart and quavering mind."[491] While the infidel speech was mentioned, other potentially controversial elements of Burbank's religious beliefs were completely absent.

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[489] Graydon E. McClellan, "Luther Burbank and Organized Religion," sermon preached at First Presbyterian Church, Santa Rosa, 6 February 1949, unpublished typed manuscript, LBP-LOC., 2.
[490] McClellan, sermon, 2-3.
[491] McClellan, sermon, 4-5.

The discrediting of the Eugenics movement after the Second World War, combined with the slow abandonment of a scientific basis for racism between the wars,[492] combined to darken the third issue that Burbank had championed throughout his life. If genetics was more complicated than the eugenicists had realized (traits are controlled by more than one gene),[493] then the simple answers and ideas that Burbank supported no longer made sense in the more complex world of genetic discoveries.

Perhaps the most important way that friends tried to continue to honor the name and work of Burbank was that of Ford and Edison. Ford decided to build a small community outside his factory in Dearborn, Michigan. One of the houses constructed was actually Burbank's childhood home – taken apart in Massachusetts and reassembled in Dearborn – along with his work shed from Santa Rosa (purchased from Elizabeth) along with various garden tools promised to have been used by him. One of these was dramatically encased in wet cement by Edison himself, who also signed the cement, when the house was dedicated.[494] A visit to The Henry Ford museum in Dearborn will find the shovel still encased in the Edison-signed cement just inside the entrance to the museum itself, as well as his childhood home, garden shed, and a recreated Santa Rosa garden in Greenfield Village, the community Ford established.

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[492] See especially Elazar Barkan, *The Retreat of Scientific Racism: Changing concepts of race in Britain and the United States between the world wars* (New York: Cambridge University Press, 1996).
[493] Levine, *Eugenics*, 22.
[494] Photos of the ceremony exist on page 1 of *Ford News* (Dearborn Michigan), 15 October 1928.

A unique way that complete strangers attempted to honor Burbank was through the paintings of Frida Kahlo and Diego Rivera, both of which were completed in 1931. Rivera painted a giant mural entitled *Allegory of California* in the Pacific Stock Exchange in San Francisco. Of the many figures that are a part of this painting, there are apparently only two that are historical – James Marshall, the man who discovered gold in 1848 and inspired the famous California gold rush, and Luther Burbank.

Frida Kahlo painted an allegorical image of Burbank. His torso and head are clearly recognizable as Burbank, with his stark white hair, but his legs turn into a tree trunk whose roots are wrapped around a skeleton buried underneath. On the sides are fruit trees, and Burbank is holding leaves instead of sprouting them. There is no evidence that either Rivera or Kahlo knew Burbank, nor is there evidence that they knew some of the same people. Kahlo was perhaps inspired by Burbank because of his work with hybrids, and the beauty that he believed such hybrids produced. This idea of hybridization – especially of a so-called mixed Mexican culture – was important to Kahlo, and her interest must have inspired Rivera as well.[495]

This thesis has ventured to argue that Burbank deserves to be placed at the center of all of these debates in American society in the early twentieth century. Not because Burbank was on the cutting edge of scientific discoveries, because in many ways, he was not. His theories and predilection for Lamarckian views of evolution placed him solidly outside the scientific consensus that triumphed after

[495] See the fascinating article by Lucretia Hoover Giese, “A Rare Crossing: Frida Kahlo and Luther Burbank,” *American Art* 15 (Spring 2001): 53-73.

his death, and this is one of the reasons that the scientific community has been loathe to recognize the ideas and work of Burbank. While historians of science like Katherine Pandora issued a call to bring Burbank back into the scientific discussion, this has not taken place in cultural histories. He appears at best on a page or two, usually as a foil to a figure deemed more important like Edison or Ford or Margaret Sanger or Charles Davenport. But the polls that were frequently taken should not be dismissed as mere frivolity. They reveal something about the mindset and worldview of people. The fact that Burbank continued to be listed as one of the most important Americans (at least during his lifetime) should make us aware that people were paying attention to him. His speeches mattered, and so did his ideas. His work with plants and the marvelous varieties he was able to produce is what gave his ideas validity. If people had not considered his ideas worthwhile, they would have ignored him.

Burbank's work demonstrated that science had a purpose beyond the theoretical; science could improve the lives of human beings. His belief that he was harnessing the power of evolution to produce all of his plant varieties sprung from this concern for a practical, useful botany. His emphasis on practicality and the fact that plant products had not legal protections like patents led Burbank to ignore most of the conventions of scientific practices – detailed records of experiments, work in university labs, and published results – were key factors in his ultimate rejection by more traditional scientists. But his stated desire to produce products for the betterment of humanity was a reason that regular people paid close attention to his work and words.

To have faster growing, better tasting, and more beautiful plants would help elevate the human race to its next level of development, and idea that played directly into Burbank's support of eugenic programs and ideas. If evolution could be harnessed to bring out the best traits in plants, the same kind of care and oversight should be applied to humans to guide their evolution and improvement. Burbank's celebrity – and his renown as a botanist – gave his ideas and writings a legitimacy that people paid attention to; the fact that he found success in creating different plant varieties seemed to demonstrate that the same result was possible with people, too.

Finally, Burbank's religious beliefs also help show the way that the religious contours of American culture were morphing and expanding in ways not seen before. His rejection of traditional Christian theology matched the development among many who could be considered a part of liberal theology, but his embrace of ideas like mental telepathy and his support for Hindu Yoga meditation might have seemed like superstition to some other liberals. And the fight over the teaching of evolution in the mid-1920s, combined with Burbank's declaration that Jesus was an infidel, brought so much condemnation upon him that the increased stress probably contributed to his illness and death.

This thesis has used the words and ideas of Burbank as a major source for its arguments, but this results in some issues that should be frankly addressed. All of Burbank's correspondence and records were donated to the Library of Congress upon the death of his wife, Elizabeth. All of the records, though, were under her care (and the care of his sister, Emma, before that), so there is always the concern that material deemed detrimental to his reputation was removed or destroyed

before being donated. For example, there appear to be almost no records of his schooling beyond a few notes here and there. Were full records not kept? Or were they removed because they would have shown that Burbank did not do well in school, and therefore lend support to the idea that he was not properly educated enough to be considered a scientist? That is a shortcoming of using Burbank's papers; we know they were edited and collected, but have no way of determining what might have been intentionally left out or what was lost over time.

There is also the challenge of memory, as many of the details of Burbank's life come from his own reminiscences during interviews and speeches. But are they accurate? Did he tailor his comments and tweak his stories to satisfy the perceived interest and needs of his audience? For example, there is no mention at all of a spurned love interest in any of his early letters in discussing his move to California, but they appear in the autobiography published just after his death. Was there really a young woman who rejected him, and that embarrassment helped push him westward? Or was that an imagined event that added a bit of romance to an otherwise bland tale? In one sense, it does not matter if these events were factually accurate or not; they were a part of the construction of the Burbank Story, and it was that story that was consumed by the public who loved him.

There are many avenues of future research that could be pursued. For one, the records of organizations like the Carnegie Institute could be examined to see if there was more discussion of Burbank than was revealed in the letters sent to him. In similar fashion, the papers of friends like David Starr Jordan at Stanford, and the many professors at the University of California Berkeley that interacted with Burbank could be examined. We know what they said to Burbank – those letters

are in the Burbank Papers at the Library of Congress. But what did they say to each other about him and his work? Did they express more doubts about him than they did in their personal letters and articles published in popular journals? An examination of this kind of material could result in a deeper, more contextualized picture of Burbank among his peers than is revealed in the letters preserved in his papers.

Another especially important area of future research would be Burbank's connection to the Agricultural Experiment stations being established across the United States in the later 1800s and early 1900s. There are some signs that he exchanged seeds with some of them, but how many? Did the people running these stations view Burbank in a positive or a negative light? Did they see his work as helpful to their own? Did Burbank's success in producing plants – a practical exercise similar to what they were engaged in – make their work easier or more difficult? Was their work compared to his? Did they use his work as justification for increased funding from state governments, or was money withheld because the stations were seen as not producing the kinds of results that Burbank was?

In similar fashion, Burbank appears to have received numerous letters from people around the United States asking him to begin work on specific plants, especially cotton. In addition, his younger brother Alfred caused problems for him in the 1910s by using the Burbank name to try to get financing to establish his own research stations in different places in the country. The publicity from these kinds of requests could also flesh out the public view of Burbank and his work, and show how the name Burbank carried weight and influence – even it was not Luther Burbank himself.

In conclusion, an examination of Burbank's life allows us a greater understanding of the contours of these cultural debates over evolution, eugenics, and religion, and gives us a window into the ways that Americans thought about and processed all of these conflicting ideas. By ignoring Burbank, our understanding is less complete, and hopefully this study has brought some of these issues into greater clarity.

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