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ENVISIONING THE NATURAL WORLD FOR THE MODERN CHILD

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degree of

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By

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FANCY AND IMAGINATION: CULTIVATING SYMPATHY AND
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A DISSERTATION APPROVED FOR THE
DEPARTMENT OF THE HISTORY OF SCIENCE

BY

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Introduction

In May 1893, the World's Columbian Exposition in Chicago opened in the magnificent "White City" on the shores of Lake Michigan. The World's Fair marked the four hundredth anniversary of Columbus' arrival in the Americas. For Americans the Exposition provided an opportunity to demonstrate to the people of the nation and the world the remarkable technological and scientific strides that had been made in that time. Chicago was the fastest industrializing city in the West and the fair, with its 266 foot tall Ferris Wheel made of steel and its streets and buildings illuminated with electric light bulbs, was a stunning representation of the benefits of industrialization. At the dedication to the Exposition building, Chauncey M. Depew, famous orator and a member of the World's Columbian Commission, spoke of the progress the fair represented:

If interest in the affairs of this world is vouchsafed to those who have gone before, the spirit of Columbus hovers over us to-day. Only by celestial intelligence can it grasp the full significance of this spectacle and ceremonies.

From the first century to the fifteenth counts for little in the history of progress, but in the period between the fifteenth and the twentieth is crowded the romance and reality of human development. Life has been prolonged and its enjoyment intensified. The powers of the air and the water, the resistless forces of the elements, which in the time of the discoverer were the visible terrors of the wrath of God have been subdued to the service of man. Art and luxuries, which could be possessed and enjoyed only by the rich and noble, the works of genius which were read and understood only by the learned few, domestic comforts and surroundings beyond the reach of lords or bishops, now adorn and illumine the homes of our citizens. Serfs are sovereigns and the people are kings. The trophies and splendors of their reign are Commonwealths, rich in every attribute of great States and united in a

Republic whose power and prosperity and liberty and enlightenment are the wonder and admiration of the world.¹

As visitors wandered through the Manufactures and Liberal Arts Building, or the Electricity Building, or the Horticultural Building, or the Fisheries Building, they were reminded of the role that science and innovation played in the progress before them. In Dennis Downey's thoughtful analysis of the Exposition, *A Season of Renewal*, he uncovers a blend of optimism for the future and nostalgia for the past.² Victorians read the signs of the fair that clearly indicated that they were heading into a new era; however, there was little expectation of a clean break with the past. Downey reads the fair as a period of "renewal". In other words, this period "had an elastic quality that could accommodate a respect for the past with a sense of expectancy for future possibilities."³ The Exposition was a microcosm that allows us to understand the macrocosm of late-Victorian society. People were grappling with this era of great change in many different arenas.

Following the Civil War, American cities sprang to life as people flocked to the city from rural America, and other countries, in search of opportunities. In 1860, 20% of the U.S. population lived in the cities. This percentage steadily grew over the

¹ Chauncey M. Depew, *The Columbian Oration Delivered at the Dedication Ceremonies of the World's Fair at Chicago, October 21, 1892* (New York: E.C. Lockwood, 1892), 23-24.

² Dennis B. Downey, *A Season of Renewal: The Columbian Exposition and Victorian America* (Westport, Conn.: Praeger, 2002), xv. Downey approaches the Exposition as a "civic ritual invested with great cultural meaning" and follows these lines of meaning to where they converge in order to recapture a sense of the "common culture" shared by people in the last decade of the nineteenth century.

³ *Ibid.*, xii.

next sixty years as the American industrial revolution reached its zenith. Between 1820 and the Second World War, over forty million people from around the world immigrated to the U.S. There was a definite link between industrialization and urbanization as those states that were the heaviest industrial centers had the most people living in urban environments, with the most heavily urbanized and industrialized region being the northeast. By 1920, the agricultural nation officially became an urban-industrial nation when the scales turned the other direction and the census indicated that more people occupied the cities than the rural areas.⁴ The consequences of the demographic shift were remarkable. As the cities grew, skylines morphed constantly to meet the needs of the incoming populations. The rapid influx of new city dwellers overwhelmed the residential capacities of urban neighborhoods, creating crowded living spaces in squalid areas filled with waste products from the factories. The benefits of industrialization that the World's Columbian Exposition represented were balanced by the realities of life in the cities.

Industrialization need not be characterized as wholly negative; in fact, it solved the problem of product insufficiency that had plagued people in the previous centuries. Not only were goods being manufactured to meet the needs of the people, it produced the prospect for wealth by creating jobs and opportunities for workers.

⁴ Raymond A. Mohl, *The New City: Urban America in the Industrial Age, 1860-1920*, The American History Series (Arlington Heights, Ill.: H. Davidson, 1985), 8. Relying on U.S. Bureau of the Census data, Mohl meticulously tracks the changing demographics in the American cities.

Further, during this period scientific and technological innovation exploded.⁵ However, Americans were divided on the issue of industrialization and the effects it had on society. On one side were those who believed that it was a natural progression for the human race that would enhance the harmony within human society, as well as that between humanity and the natural world. Others believed that industrial capitalism had a corrupting effect on people because it took them further away from their innocence as they moved away from rural peacefulness into cities rampant with crime, pollution, and overcrowding. There were many in the middle that appreciated the progress but were ambivalent about its effects. As David Noble argues in *The Progressive Mind*, the movement from an agriculture-based society to an industrial-based society presented moral issues as well as technological, sociological, and environmental concerns. Noble presents innovators like Frederick Winslow Taylor, Henry Ford, and Thorstein Veblen as examples of progressives who believed that scientific and technological advances were instrumental in creating a rationally ordered world and progressing society into the modern age. Others, like historian Frederick Jackson Turner and politician and conservationist Theodore Roosevelt, believed that industrialization and overcivilization threatened humanity by leading it toward a world marked by great corruption. These latter figures and others who thought like them believed that nature held the redeeming qualities that were required

⁵ For a thorough discussion of the effects that industrialization had on American cities and their inhabitants see Maury Klein and Harvey A. Kantor, *Prisoners of Progress: American Industrial Cities, 1850-1920* (New York: The Macmillan Company, 1976).

to restore humanity to its childlike innocence; as a result, Americans needed direct contact with nature.⁶ Industrialism was linked with complexity and chaos in the minds of some, while for others the traditional rural life and nature were linked with simplicity and morality.

American ambivalence over the effects of industrialization and modernization is well documented by historians. Some late nineteenth century American intellectuals were reluctant to exchange the beliefs and principles of the waning Victorian age, for the ideals of modernity.⁷ George Cotkin contends that modernism coincided with the Darwinian revolution because of their shared hallmarks of struggle and change. Victorian ideals, however, were based on moralism, and valued the conventional. In the period from 1880 to 1900, some intellectuals struggled to reconcile the two sets of ideals and to make sense of the transition from the Victorian era to the rapidly modernizing twentieth-century. Cotkin argues that it would misrepresent much of the thinking of this time to see it as a clean break between Victorian and modern values, and instead suggests that the period was filled with “reluctant modernists” who did not reject modernism, but instead, were able to approach it skeptically, with the best interests of society in the back of their mind,

⁶ David W. Noble, *The Progressive Mind, 1890-1917*, The Rand McNally Series on the History of American Thought and Culture (Chicago: Rand McNally, 1970). This divided mind came to a head in the presidential election of 1896 between President Grover Cleveland who represented finance capitalism and candidate William Jennings Bryan who set himself up as the defender of rural virtue.

⁷ George Cotkin, *Reluctant Modernism: American Thought and Culture, 1880-1900*, Twayne's American Thought and Culture Series (New York: Twayne Publishers, 1992).

rather than accepting modernization blindly.⁸ The subjects of this dissertation, scientist Liberty Hyde Bailey and writer Mabel Osgood Wright, exhibited this same reluctance toward the modernizing tendencies of the period and their works represent some of the clearest articulations of some of the “shared assumptions and preoccupations that inform every historical generation.”⁹

Bailey, as a professor, and later Dean, of the Department of Agriculture at Cornell University, was an ardent advocate of scientific agriculture and firmly defended a role for science in agriculture and horticulture. His career was predicated on his belief that science could benefit farmers, and he directed the Department of Agriculture to bring such knowledge to the public through extension services, farmers’ institutes, and publications. Although Bailey had an unwavering faith in science, he did not believe that a scientific approach alone could benefit the farmer in ways that the new era demanded. He was also an outspoken advocate for the spiritual life of the farmer and published philosophical books and poetry lauding the relationship between humans and the land. He spearheaded a rural life movement in order to slow down what he feared was a mass exodus from the farm and gained recognition as the national spokesperson for this movement through his tenure on Roosevelt’s Country Life Commission and through his many publications.

Wright, a writer and conservationist, had a first hand awareness of the effects that industrialization had on the city and its inhabitants, having grown up in New

⁸ Ibid., xiv.

⁹ Downey, *A Season of Renewal*, xvi.

York City during its greatest period of growth and tumult. As an adult, she continued to live in the city during the fall and winter months and even fondly wrote an autobiography which featured the city she loved as the main character. She did seek refuge from the bustle of the city in the warm months and took the train fifty miles north to her family's retreat in Fairfield, Connecticut. It was there, amidst the fields and forests that she wrote voluminously about her greatest passion: nature. She feared the effects that the encroaching industrial areas were producing in natural areas and on the creatures who resided there, particularly birds. Her books preached the virtues of suburban nature and she sought to connect both her adult and child readers emotionally to the natural world. It was precisely because Bailey and Wright were "reluctant moderns" that led to their quests to find a middle ground between the modern world and the world they were watching slip away before their eyes. Both Bailey and Wright privileged rural life and a human connection with nature. Bailey was a leader in the Country Life Movement and, as previously mentioned, wrote poems and philosophical books that praised this lifestyle. In nearly all of Wright's stories her characters found their peace of mind, answers to their questions, or the resolution to their problems in the country. Her characters shared a unique bond with rural or suburban nature through their appreciation of it and desire to gain knowledge about it.

Both of these subjects also recognized that children experienced the world differently than did adults. As a result, Bailey encouraged teachers to meet students at their level and not inundate children with factual information. Wright used fanciful

story lines to convey knowledge and to promote sympathy with nature. For both of these individuals, the accuracy of information was important, but not at the expense of a relatable experience for children. Both considered the spiritual uplift of children an important factor to consider because they believed that there were two complementary ways to know nature: the intellectual and the spiritual. Children, because they were considered more primitive and more in touch with their emotions, were more likely to attain spiritual and emotional communion with nature. In addition, children who had achieved an emotional connection with nature were more likely to work to ensure that the effects of industrialization did not overwhelm natural areas, and destroy the balance between the human and the natural worlds.

Not only did people fear the social loss of a more traditional way of life, they also feared the effects that this changing world would have on the human psyche. In his book, *The Divided Mind*, Peter Conn argued that American citizens approached the era with a “divided mind.” While many supported and lauded the great changes occurring in front of them there was also a backlash against these changes and a resistance to ushering in any further change.¹⁰ He further argues that American mechanization and organization, so prevalent in the industrializing corridors, “contributed to the actual and imaginative diminishment of the individual.”¹¹ Conn noted that artists and writers rejected the traditional subject of expressions promoted

¹⁰ Peter Conn, *The Divided Mind: Ideology and Imagination in America, 1898-1917*, ed. Albert Gelpi, Cambridge Studies in American Literature and Culture (Cambridge: Cambridge University Press, 1988).

¹¹ *Ibid.*, 11.

by the Academy (usually aged white males who were of the genteel tradition) since their work did not reflect modern American life because it ignored industrialism, immigration and the changing pace of life.¹² However, at the same time these intellectuals were ambivalent about abandoning the past.

According to T. J. Jackson Lears, in *No Place of Grace*, educated and prosperous Americans expressed their distaste for modernism by retreating to an aesthetic and a set of values that resembled the simpler times prior to the modern age.¹³ Lears maintains that Americans “began to recognize that the triumph of modern culture had not produced greater autonomy (which was the official claim) but rather had promoted a spreading sense of moral impotence and spiritual sterility—a feeling that life had become not only overcivilized but also curiously unreal.”¹⁴ Like the authors and artists in Conn’s work, the members of the middle and upper classes in Lears’ work, sought experiences that were more realistic. However, they also rejected cold, hard rationality and sought to commune with the romantic past. Over-vexed Americans idealized rural life, medieval culture, and childhood. For example, many people were drawn to the simplicity and distinct look of handcrafted furnishings of the Arts and Crafts movement. Not only were the items made by artisans and not mass-produced in a factory, they designed them with elements that

¹² Ibid., 4-5. Conn goes so far as to call the rejection of the traditional work of the Academy for the more accurate expression of modernism a “revolution”.

¹³ T. J. Jackson Lears, *No Place of Grace: Antimodernism and the Transformation of American Culture, 1880-1920* (Chicago: University of Chicago Press, 1981).

¹⁴ Ibid., 4-5.

reflected the beauty of the natural world. According to Lears, “craft revivalists envisioned rural life as a path to moral regeneration.”¹⁵ Of particular interest for my argument, a “growing number of ‘overcivilized’ Americans idealized the child’s capacity for unrepressed emotional and imaginative experience.”¹⁶ They also held a great respect for the “children of the race”, or medieval humans, who they considered simple and childlike, with the natural ability to look at the world with reverence and awe. As a result, these childlike qualities were encouraged in children and adults alike, especially through literature.

The responses of both Bailey and Wright were part of the larger progressive movement for change, except that they emphasized that the web of interconnectedness extended beyond the human realm to encompass the natural world as well. Both had concerns for the plight of humanity, but they were more concerned with humanity’s connection with, and by extension their interactions with, nature. This concern was two-fold: not only did they both firmly believe that humans needed the revitalizing principles of nature, especially in light of the changes taking place, but they also both held that nature warranted this respect in its own right.

Bailey and Wright were working during a period when science was professionalizing. Due, in part, to the rhetoric of the new scientific professionals, science was touted as the solution to many modern problems and the greatest source of progress in the United States. As a result of the scientific orientation of American

¹⁵ Ibid., 75.

¹⁶ Ibid., 146.

culture, nature was viewed as a source of rational knowledge, often at the expense of its spiritual value.

As science gained in import, scientists and educators increasingly made a place for science in the expanding curriculum for secondary schools and universities. Some scientists and educators argued that students should learn these principles even earlier in their educational careers. Others believed that a scientific education at such a young age was not developmentally appropriate. The result was a toned down version of a science course, focused on the natural sciences, known as nature study. However, even within nature study there were proponents for a more scientific approach. The ensuing debate about how best to teach elementary school children about nature was passionate. Bailey and Wright took a stance somewhere in the middle of the two camps. Both respected science, Bailey as a practitioner and Wright as someone who worked with scientists on her books. They both thought that representations of nature should not stray too far away from the facts. However, facts should not overwhelm the purpose of teaching children about the objects of nature—to encourage them to form a sympathetic relationship between themselves and the environment of which they were a part. This approach to nature study was in accordance with the progressive educational reforms that made learning child-centered. Bailey did not want technical language to detract from a student's experience with nature, so he downplayed its importance. In his philosophical introduction to nature-study for educators, *The Nature Study Idea*, he encouraged teachers to stray from the language of science, if necessary, to teach on the level of

the child, and capture the spirit of nature. In two of Wright's books for children, *Tommy-Anne and the Three Hearts*, and its sequel, *Wabeno the Magician*, she used imaginative and fanciful story lines to hold the interest of children, but also as an instructional technique to help them understand the facts of nature in terms to which they could relate.¹⁷ Both Bailey and Wright took a moderate stance on incorporating fancy and imagination into nature study; both were cautious not to misrepresent the facts of nature, but also not to be oversentimental.

The purpose of Bailey and Wright's moderate stance on fancy and imagination was a reaction to nature being defined as a source for rational knowledge. While they both consented that this was true, they also believed that it was a source for spiritual knowledge and experience as well. They wanted people to understand nature, but not at the expense of communing with nature on a spiritual and emotional level. They believed that when people approached nature in the latter way that they were more likely to respect nature. If people did not have access to these experiences in nature, as was happening increasingly in the modernizing world, Bailey and Wright

¹⁷ The word *fancy* resulted from shortening the word *fantasy* in the 15th century. William G. Webster and William A. Wheeler, *A Common-School Dictionary of the English Language* (New York: Ivison, Blakeman, Taylor & Co., 1872). Early twentieth-century dictionaries and encyclopedias have defined fancy variously but all with a common theme: fancy was essentially synonymous with unrestrained imagination and a disregard of reason. Imagination, or the ability to formulate mental images, was a faculty that everyone possessed to varying degrees. Both imagination and fancy stand in direct contrast to reason, or the intellect, because the former involve an intangible reality; the objects or events that the imagination formed could be based in reality, but because they existed in the mind only, they lacked veracity. For a contemporary definition of fancy *The Encyclopedia Britannica: A Dictionary of Arts, Sciences, Literature and General Information*, 11th ed., vol. 10 (New York: The Encyclopædia Britannica Company, 1910).

feared that this disconnect would lead to a lack of respect. The modern world, with its focus on materialism and industry, already had disconnected people from the spiritual virtues of the land. And the consequences of this were not only detrimental for nature, but for the human soul.

This dissertation will explore the debates surrounding the roles that both science and imagination were given by scientists, educators, and nature writers in the progressive era. Chapter 1 will examine the discussions that took place in scientific and educational journals over whether the study of nature should be shaped like a course in elementary science or through the less rigid and more imaginative explorations of nature study. Nature-study was mainly controlled by scientists and science educators; they sought to align the values of the pedagogical approach with science and were less tolerant of a fanciful representation of nature. There were those, like Bailey, who advocated a moderate position on the issue, but this approach was not in line with the values of those in most positions of power. But, the formal classroom was not the only venue available for children to learn about nature, and there was a proliferation of nature books for children in the progressive era, both fiction and nonfiction guidebooks. Literary professionals had the same concerns about how scientific these nature study books should be, paralleling the debates about how to study nature in the classroom, and Chapter 2 will examine the contours of this debate in literary circles. Here the debate was more two-sided, as fanciful literature was recognized as an important genre for children, it was easier for nature literature

to be fanciful. Despite this latitude, nature writers who were sympathetic with the sciences were less likely to advocate the use of fancy in the nature story.

Chapters 3 and 4 will focus on Liberty Hyde Bailey's stance on the balance between fact and imagination in formal nature-study. Bailey was one of the key figures in the formation of a nature study philosophy and was read by educators at all levels. He was a scientist who argued that "facts should not be worshipped" but when it came to forging a language that would meet the needs of children he did so from intellectual, emotional, and moral standpoints. Bailey was careful to be critical of overly sentimental representations of nature, but he encouraged allowing latitude for a child's interpretation of nature. Further, he advocated that all people, not just children, be taught the spiritual value of nature. Wright took this approach from the level of theory to practice, incorporating fancy and imagination in her nature stories, and Chapters 5 and 6 will examine the philosophical and ethical aspects of how she balanced fact and fancy. She publicly argued that a new era of nature literature had emerged which used "nature as a field for fiction," and defended the use of literary tricks, like making animals talk, in order to relate the natural world to that of the child.

The period in which Bailey and Wright were working was a complex period in history, with many opposing values competing for supremacy which fueled larger cultural debates that pitted these values against one another, including: reason versus emotion and fact versus fancy. Further, nature enthusiasts in the form of scientists, science teachers, and nature writers were vying for the authority to speak about

nature. In the late-nineteenth century it was not clear which sides were going to be successful in these debates—the discussions were heated at times, but ongoing. As a result, nature-study advocates were not teaching a watered down form of science, but made room for spiritual and emotional lessons. And some nature-writers were free to represent nature fancifully as long as it adhered to an accurate representation of nature. By the end of the second decade the scientific and rational approach had triumphed and the moderate stance that Bailey and Wright both took became obsolete.

Defining Nature-Study

Nature-Study and the Progressive Education Movement

In the final decades of the nineteenth century, evidence abounded that children were not as in touch with the natural world as had been previous generations. G. Stanley Hall, a renowned psychologist and advocate of child study at Johns Hopkins University, demonstrated the fact that modern, urbanized youth were not conversant with basic concepts that would enable them to better understand nature.¹⁸ In September of 1882 Hall, with the help of a number of teachers, interviewed small groups of Boston children as they entered primary school and asked them basic questions about their natural surroundings. He found that the majority of the children tested were unaware of the basic concepts and objects of nature. For example, 80% of the children did not know what a beehive was, while 75% did not know what season it was. Hall found that boys fared slightly better than girls on many of the questions because they spent more time in the out-of-doors than young girls who were perfecting their domestic tasks inside under the supervision of their mothers. Not surprisingly, children from the country were able to answer 86% of the questions with higher accuracy than the city children, indicating that rural children benefited from their daily connection with the out-of-doors. He noted encouragingly, however, that city children's knowledge of nature could be greatly improved by a simple visit

¹⁸ G. Stanley Hall, "The Contents of Children's Minds," *The Princeton Review* 11 (May 1883): 249-272. For a useful biography of Hall see Dorothy Ross, *G. Stanley Hall: The Psychologist as Prophet* (Chicago: The University of Chicago Press, 1972).

to the countryside. Children who were living in urban areas simply did not have the intimate contact with the natural world that children who were brought up on the farm did. And because fewer and fewer children were being brought up on the farm from the latter years of the nineteenth-century on, children were experiencing a disconnect from nature.¹⁹

Hall accepted and popularized the general psychonomic theory that the development of the child paralleled the evolution of the human race. In other words, young children were the equivalent of pre-civilized peoples in their assumptions about and interactions with the world. Like these ancient peoples, young children were mythopoeic, imaginative, and non-rational. This theory that the progress of a human life recapitulated the stages of racial evolution was a progressive belief that assumed that the pinnacle of human evolution was Victorian society. Hall was deeply concerned that this divide between children and nature would impede the recapitulation of the race and that the results would be injurious to the progress of civilization.²⁰ As a remedy, Hall and other educators suggested nature-study as a solution to bridging the gap; the purpose of nature-study was to bring the young back

¹⁹ Elizabeth Keeney has linked children's lack of knowledge about nature with the agricultural depression of the 1890s. The agricultural depression forced many farmers to leave the farm for the cities. As a result of this emigration, their children would not know the details of a rural life, nor would they feel an intimate connection with the countryside. Elizabeth Keeney, *The Botanizers: Amateur Scientists in Nineteenth-Century America* (Chapel Hill: University of North Carolina Press, 1992).

²⁰ G. Stanley Hall, *Adolescence; Its Psychology and Its Relations to Physiology, Anthropology, Sociology, Sex, Crime, Religion and Education* (New York: D. Appleton and Company, 1904).

into contact with the out-of-doors. The study of nature became a standard part of the curriculum of the schools in the last decade of the nineteenth-century and the early years of the twentieth-century, and was given the formal name of Nature-study.

Americans have had a long-standing relationship with nature. During the early Republic, Americans, fueled by a sense of national pride, catalogued and observed the natural world and recorded it in books for others to enjoy.²¹ In the mid-nineteenth century, the Transcendentalists, fueled by Romanticism, produced popular essays and books that met the growing demand for books on nature.²² Motivated by the same dilemma that the Romantics faced, namely “the growing sense of man’s isolation from the natural world” due to industrialization, the generation following the Transcendentalists in the United States turned again to nature for reprieve from the changing world.²³ Natural history gained in popularity in the later nineteenth

²¹ Margaret Welch, *The Book of Nature: Natural History in the United States, 1825-1875* (Boston: Northeastern University Press, 1998).

²² There are many scholarly volumes on transcendentalism as a historical and as a literary movement; the following two provide a general overview of the major issues: Lawrence Buell, *Literary Transcendentalism; Style and Vision in the American Renaissance* (Ithaca: Cornell University Press, 1973), and F. O. Matthiessen, *American Renaissance: Art and Expression in the Age of Emerson and Whitman* (London: Oxford University Press, 1980). For a more specific look at the works of one of the most noted Transcendentalists, Henry David Thoreau, see Lawrence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, MA: Belknap Press of Harvard University Press, 1995).

²³ Donald Worster, *Nature's Economy: A History of Ecological Ideas*, 2nd ed., *Studies in Environment and History* (Cambridge: Cambridge University Press, 1994).

century, for both adults and children alike.²⁴ By the early years of the twentieth century, the realities of the industrialized and urbanized world made people nostalgic for the pristine beauty of nature, and they sought to rekindle their connection with the natural world.

In *Back to Nature*, Peter Schmitt argues that the modern lifestyle had brought people so far from the pastoral life that they felt disconnected from nature and sought to remedy it by reconnecting with the out-of-doors.²⁵ While most did not seek to return to an agrarian lifestyle, they did want to return to what Schmitt has called an “Arcadian” life or a “scene of simple pleasure and untroubled quiet.”²⁶ Overwrought, overworked people sought to reconnect with a simpler life, one that moved at a slower pace than that of the modern industrialized world, if not permanently, at least occasionally. Adults were content to live with one foot in each world, the modern and the Arcadian, seeking temporary reprieve in nature when overwhelmed by the artificial, but ultimately choosing to live in the modern world much of the time, and

²⁴ The love affair between Americans and nature is the topic of a number of notable books including Paul Brooks, *Speaking for Nature: How Literary Naturalists from Henry Thoreau to Rachel Carson Have Shaped America* (Boston: Houghton Mifflin Co., 1980), Hans Huth, *Nature and the American: Three Centuries of Changing Attitudes* (Lincoln, Neb.: University of Nebraska Press, 1972), Roderick Nash, *Wilderness and the American Mind*, 4th ed. (New Haven: Yale University Press, 2001), and Jennifer Price, "When Women Were Women, Men Were Men, and Birds Were Hats," in *Flight Maps: Adventures with Nature in Modern America* (New York: Basic Books, 1999).

²⁵ Peter J. Schmitt, *Back to Nature: The Arcadian Myth in Urban America* (Baltimore: Johns Hopkins University Press, 1990).

²⁶ *Ibid.*

only escaping for weekends in the woods. The result of this double existence was an adult populace that was rendered powerless to remedy the environmental problems they identified in the world because they lacked the insight into the natural world that was needed to understand the issues. Instead they invested their hope for change in the next generation; their children shouldered the burden of fixing the problems caused by industrialization.

Historians of childhood have repeatedly argued that how children were perceived and treated during a given period speaks volumes about larger societal issues; for example, the Progressives focused much of their reform efforts on children. According to census records, quoted by historian Priscilla Ferguson Clement, in 1890 a little over one-third of the nation was under fifteen years of age.²⁷ This is not an insignificant number and indicates the importance of the history of American childhood. Bernard Wisby said it best when he wrote “The history of the changing notions of the child and of the debate about child rearing is, therefore, an important chapter in our ceaseless national inquiry about what is wrong with America and what America needs in order to be put right.”²⁸ By examining the shifts in the meaning of childhood and the development of practices to meet the changing needs of

²⁷ Priscilla Ferguson Clement, *Growing Pains: Children in the Industrial Age, 1850-1890*, Twayne's History of American Childhood Series (New York: Twayne Publishers, 1997), 4-5.

²⁸ Bernard W. Wisby, *The Child and the Republic: the Dawn of Modern American Child Nurture* (Philadelphia: University of Pennsylvania Press, 1967), 4.

children we can begin to understand the debates over the role of fancy and imagination in nature-study and literature during the Progressive era.

Characterizing childhood during any historical era is difficult, but as America shifted from an agricultural nation to an industrial one, there was a marked increase in the diversity of childhood experiences. Clement maintains that in the late nineteenth-century “there were many childhoods” due to regional, socio-economic, and gender differences.²⁹ Most children at the end of the nineteenth-century and beginning of the twentieth-century lived in rural areas; however, the demographics were quickly shifting as people began to abandon their farms and move into the cities. As the demographics changed, so did the average American life in the city. In addition, the meaning and importance of childhood changed over the course of the nineteenth century from the Puritan-inspired image of children as inherently wicked beings to a belief in children as innocent creatures in whose development laid the hopes of the future.³⁰ By the end of the century, children were increasingly identified with goodness and innocence, and increasingly contrasted with the harsh, unstable world created by the onset of the industrial revolution. As the modern world became more

²⁹ Clement, *Growing Pains*, 1.

³⁰ This sentiment is echoed by a number of scholars, including: Mary Lynn Stevens Heininger, "Children, Childhood, and Change in America, 1820-1920," in *A Century of Childhood, 1820-1920*, ed. Mary Lynn Stevens Heininger (Rochester, NY: Margaret Woodbury Strong Museum, 1984), Anne Scott MacLeod, *A Moral Tale: Children's Fiction and American Culture, 1820-1860* (Hamden, CT.: Archon Books, 1975), Gail Schmunk Murray, *American Children's Literature and the Construction of Childhood*, Twayne's History of American Childhood Series (New York: Twayne Publishers, 1998), Jacqueline S. Reinier, *From Virtue to Character: American Childhood, 1775-1850*, Twayne's History of American Childhood Series (New York: Twayne Publishers, 1996), and Wishy, *The Child and the Republic*.

difficult to navigate due to its increasing complexity, Americans lost touch with their more traditional morality toward the land and each other, and had created a world that was “gilded” and harsh. Children, interestingly, because of their growing association with purity and morality, became the savior for adult failures because the qualities of children hearkened back to simpler days. As people came to believe more and more that children held the hope for the future of the nation, their care and training was increasingly controlled by the state. Proper socialization and education was essential for building the model citizen, and thus children were removed as laborers in the factories and fields, at least part of the year, and sent to school as education became compulsory.

The common school movement in the mid-nineteenth century, led by Horace Mann, sought to provide the opportunity for all children to be educated. Reformers argued that well-educated, civic-minded citizens were integral to the survival and the success of the nation, so schools took on the important job of citizen-building. The common school movement began as a reaction to the disunity among the people as evidenced by the Civil War. Mann, both impressed with the diversity of values held by Americans and horrified by the bloodshed these differences could cause, proposed universal education in order to ensure that all Americans, regardless of their differences, would be inculcated with a common system of values.³¹ The common school, ideally, was open to any child, regardless of class, gender, religious or

³¹ Lawrence A. Cremin, *The Transformation of the School: Progressivism in American Education, 1876-1957* (New York: Alfred A. Knopf, 1962).

political affiliation, and as such, served as an equalizing force among many Americans.³² The focus of the curriculum was on the basics of reading, writing, arithmetic, and geography and the classroom teaching method involved rote learning, memorization and recitation.

Educators and administrators shifted the purpose of public schools in the latter decades of the nineteenth century in reaction to the onset of rapid industrialization and the realization that the common program of study was not in tune with the changing times. These progressive educators believed that the current generations needed to be educated in order to prosper in the urban-industrial world. Since many of the educators, librarians, and scientists who were publicly discussing how children should learn in general, and more specifically how they should learn about nature, were located in the urban-industrial regions of the northeast, it was the children in these regions that they were targeting with their educational reforms. Typically, these children were from urban middle-class families because these were the children who had the most access to educational resources and libraries, be they public or private in-home libraries. In addition, due to the renewed interest in the importance of children and their status as a valued element in the middle-class family, parents initiated or at least encouraged the educational reform movements targeting their

³² Ibid. The openness of the common school was an idealistic dream of Mann's as not all children went to school despite their availability. The first compulsory education law was passed in 1852 in Massachusetts, however, the common school movement was slow to make it into the south; it took until 1918 for Mississippi to pass a compulsory education law. And, as Cremin has duly noted, these laws did not guarantee that children could go to school.

children. Although middle-class, urban children were the primary focus of reforms, working-class urban and rural children also were targeted. There was an increased focus on education for rural children because of the concern that too many of these children were leaving the farm and losing their sense of connection with the rural landscape. In addition, the urban middle class endorsed public education for working-class immigrant families as a means of assimilating them into American culture.³³ These endorsements were rarely altruistic, as most middle class people saw this as a solution to allay their anxieties about the influence that immigrants had on their nation and their families.³⁴

As a result of the perceived need to better prepare students to live in the modern world, educators, philosophers, and psychologists set to work to change the curriculum. In *The Struggle for the American Curriculum, 1893-1958*, Harold Kliebard argues that various factions were vying to dominate the school program of study, each with an agenda to support their version of curricular reform.³⁵ Underlying Kliebard's analysis of the reform movement is a shift from positing a unified progressive education movement to identifying several competing fronts within this movement on the overall war for curricular control. While he contends that there were overlapping intentions and methods, these reformers were not a part of

³³ Reformers believed that working-class urban children, especially immigrants, would become a destructive force within the nation if not properly educated.

³⁴ Clement, *Growing Pains*.

³⁵ Herbert M. Kliebard, *The Struggle for the American Curriculum, 1893-1958*, 2nd ed. (New York: Routledge, 1995).

a self-conscious movement for unified reform, but instead were comprised of different groups with different interests.³⁶ Despite the diversity of approaches towards curricular reform there were some basic commonalities in what was being advocated: instruction should be activity- and experience-based, designed to create meaning for children and to relate to their daily lives, and the classroom should be child-centered, with particular attention to child development. For example, Calvin M. Woodward founded the Manual Training School in 1880 in St. Louis which prepared young boys for a vocation by teaching them to use tools. Despite its detractors, who contended that it lacked an educative quality, vocational training became popular and schools were founded in many major cities.³⁷ In 1902 John Dewey, the well-known philosopher at the University of Chicago, founded an experimental school on the campus. Dewey held that knowledge was the result of active problem-solving and the curriculum of his Laboratory School was geared toward this method.³⁸

³⁶ Kliebard's analysis stands in marked contrast to the classic history of curricular change by Lawrence Cremin. In *The Transformation of the School*, Cremin traces the origins and reforms of the progressive education movement. He argued that this movement began "as Progressivism in education: a many-sided effort to use the schools to improve the lives of individuals." Lawrence Arthur Cremin, *The Transformation of the School*, viii. Even Cremin recognizes the messiness of the term progressivism by stating that "[i]n the minds of Progressives this meant several things."

³⁷ Cremin, *The Transformation of the School*, 28.

³⁸ For more on John Dewey's educational philosophy see Robert B. Westbrook, *John Dewey and American Democracy* (Ithaca, NY: Cornell University Press, 1991).

Progressive educational reform was not limited to the urban areas, but also extended into rural America. In the last decade of the nineteenth century Liberty Hyde Bailey, a young professor of Horticulture at Cornell, instituted what he considered to be a more practical form of education in the university in order to train farmers in the scientific principles necessary to improve crop yields. He extended this practical education to rural children as well and advocated an experience-based education in order to enable them to solve problems unique to rural life. He sought to educate rural youth about their surroundings in order to pique their interest in rural life. The education reforms that he endorsed led to the foundation of the Nature-Study program at Cornell. Nature-study was a popular pursuit because it fit with the educational reforms that the progressives sought—it was child-centered and experience-based—and it provided a means to reconnect children with the natural world.

The appeal of nature-study as an educational force was not solely about understanding nature in order to preserve it: it was also a critique of traditional educational techniques. Nature-study was reflective of the radical critiques advanced by progressive educators against rote memorization and a focus on book knowledge, to be replaced by a shift toward an action-based education in which children learned by doing. Through the investigation of the out-of-doors, nature-study liberated the child from the inactive classroom, focused only on the mind, and allowed children to also challenge their bodies and hearts.

The pedagogical roots of the nature-study movement grew out of the mid-nineteenth century movement called object teaching. This approach to pedagogy put the object of study in the center of the lesson and encouraged children to use their senses to investigate it.³⁹ For example, a student would study a leaf and note its shape, size, color and other basic traits that are observable. Often the object of study would be used in the context of a lesson in one of the standard subjects, and, for the lower grades, the lessons were often rudimentary. But object lessons usually brought nature indoors and placed the object of study out of its usual context. Famed Harvard biologist Louis Agassiz encouraged the study of natural objects in their contexts and further reinforced a focus on natural items by proclaiming that students should “study nature, not books.” In 1873, Henry H. Straight, a naturalist and science teacher at the Central Missouri Normal School, attended the Anderson school of natural history under the direction and tutelage of Agassiz. Straight brought Agassiz's directive to study nature directly into his classroom and to his subsequent position at Oswego Normal School. In the final years of his career, he was hired by the innovative educator and administrator of the Cook County Normal school in Chicago, Francis W. Parker. Under Parker he was immersed in the method of object lessons. He combined the direct study of natural objects with the object lesson method and

³⁹ For an in-depth discussion of the pedagogical movement that led to the nature-study movement and of the movement itself see Kevin Connor Armitage, “Knowing Nature: Nature Study and American Life, 1873-1923” (Ph.D. diss, University of Kansas, 2004), Tyree G. Minton, “The History of the Nature-Study Movement and Its Role in the Development of Environmental Education” (Ed.D. diss., University of Massachusetts, 1980), and Richard Raymond Olmsted, “The Nature-Study Movement in American Education” (Ed.D. diss., Indiana University, 1967).

began teaching a form of nature study. His successor, Wilbur Jackman, took up where Straight left off and popularized nature-study by publishing one of the earliest books on the subject in 1891.⁴⁰ The idea caught on amongst school teachers and administrators, and programs were developed in the elementary schools.⁴¹ Children were directed to the natural areas beyond the walls of their classrooms to study the out-of-doors.⁴²

⁴⁰ Wilbur S. Jackman, *Nature Study for the Common Schools* (New York: H. Holt and Company, 1891). Jackman's book is recognized as the first textbook dedicated to nature-study in the schools that was published in the United States. It was designed for teachers who are planning to put nature-study into practice in their classrooms; the book discussed Jackman's nature-study philosophy, methods, and purpose and gives practical advice about initiating a program.

⁴¹ While nature-study became popular in various places around the United States, the most heavily documented centers were along the East Coast and the Upper Midwest, where institutions like Cornell University and the University of Chicago played a large part in the development of nature-study. The focus on these centers is primarily a product of the fact that major nature-study publications came from these locations which made it easier to document their involvement. Very little has been done to examine nature-study outside of these important centers. A recent step in the right direction is Ellen Doris, "The Practice of Nature-Study: What Performers Imagined and What Teachers Did" (Ed.D. diss., Harvard Graduate School of Education, 2002). Doris examines the movement from the perspective of what teachers actually did within the classroom settings around the nation. Although her analysis relies on published accounts of the curriculum practices in the publications of these major centers, they were accounts by teachers in the field. This approach allows for a broader view of what Doris has called a " 'top down' reform" movement because the directives for nature-study lessons came from the scientists and educators at universities and normal schools. A systematic examination of the geographic locations and the daily mechanics of nature-study programs in the field is necessary, but it would be difficult because, as Doris acknowledges, the evidence is "fragmentary".

⁴² Nature-study, because it focused on the near at hand, initiated a kinship between the young investigator and their local natural surroundings. This "love of home", according to Clifton F. Hodge, was the surest way to good citizenship in local and

Nature-study in the educational system was also a product of the demand for more science education to prepare citizens for life in the modern world. As a result, scientists, as well as educators, were active in the formation of the discipline of nature-study. In her recent article, Sally Gregory Kohlstedt argues that scientists played an important role in the early development of nature-study before 1900.⁴³ Scientists, or people with a scientific background, continued to play a valuable role as nature-study developed in the first decades of the twentieth century.⁴⁴ By this time they had come under the influence of child study and pedagogical theory and took the abilities and capacities of children into consideration in their nature-study instruction.⁴⁵ Scientists and educators continued their conversations over the next

national life. C. F. Hodge, "Nature Study and Citizenship," *The Chautauquan* 37 (August 1903): 489.

⁴³ Sally Gregory Kohlstedt, "Nature, Not Books: Scientists and the Origins of the Nature-Study Movement in the 1890s," *Isis* 96 (2005): 324-352.

⁴⁴ It is difficult to determine exactly what a scientist looked like in the late-19th and early-20th century. Katherine Pandora has noted in her discussion of Luther Burbank that many historians of science do not consider Burbank a scientist because his work was "emotional" and "inspirational" and this contradicted the belief that science was objective. Further, historians of science take cues from Burbank's contemporaries who did not believe he was a scientist. Katherine Pandora, "Knowledge Held in Common: Tales of Luther Burbank and Science in the American Vernacular," *Isis* 92, no. 3 (2001): 484-516. The people involved with the development of nature-study were varied in their background: some were trained in the sciences and held scientific positions at universities or state or government agencies and published in scientific journals. Others, with similar training, held positions at Normal Schools and taught both scientific and pedagogical subjects and published nature-study manuals and articles.

⁴⁵ In the 1890s child study became very popular as psychologists recognized childhood as a legitimate subject of study and a distinct period in human development. Child study advocates sought to remodel the school curriculum to

decades. The two main points of discussion were the methods and purpose of nature-study and how nature-study was related to science. There was considerable overlap and agreement on the former point: most generally agreed that nature-study should be observational and experience-based, it should focus on nature near-at-hand, and that, in addition to providing some knowledge of nature, the purpose in the elementary grades should be to put the child into sympathy with their natural surroundings and create citizens fully prepared to operate in the modern world. There was some disagreement over how factual nature-study should be and how much focus there should be on language; but all parties were fully willing to accept that instruction for elementary school children was considerably less demanding than that for high school or college students.

The most hotly debated issue was the relation of nature-study to science. In fact, this issue defined the professionalization of the discipline of nature-study. In the opening volume of the journal the *Nature-Study Review* in 1905 and again in the volume that appeared after the foundation of the American Nature Study Society in 1908, there were articles and transcriptions of symposia dedicated to this discussion. This issue was also discussed in educational journals, and to a lesser degree, scientific

follow the development of the child. Thus, since children were considered imaginative and emotional the curriculum should foster and reflect these traits. Dorothy Ross dedicated a whole chapter on the child study movement and Hall's involvement in it in her book. Ross, *G. Stanley Hall*. For insight into the general professionalization of the social sciences see Thomas L. Haskell, *The Emergence of Professional Social Science: The American Social Science Association and the Nineteenth-Century Crisis of Authority* (Urbana: University of Illinois Press, 1977), and Dorothy Ross, *The Origins of American Social Science* (Cambridge: Cambridge University Press, 1991).

journals. At issue was the extent to which the new discipline would uphold the values of science and how much control the scientific community would have over the preparation of youth. Given the fact that scientists had been working actively to clarify their professional status and authority over the previous half-century one might expect that scientists would promote values that corresponded to those of their profession, but this was not universally the case.⁴⁶ The responses to the question ranged from thinking of nature-study as a form of "elementary science" to not considering nature-study as related to science at all. Much of the debate hinged on semantics; often these two terms were interchangeable and were defined similarly. The issue over what to call nature training for elementary school children was settled by the formation of a professional journal entitled the *Nature-Study Review*. Educators and scientists decided that there was enough of a difference between

⁴⁶ On the professionalization of American science, see George H. Daniels, "The Process of Professionalization in American Science: The Emergent Period, 1820-1960," *Isis* 58 (1967): 151-166, and Nathan Reingold, "Definitions and Speculations: The Professionalization of Science in America in the Nineteenth Century," in *The Pursuit of Knowledge in the Early American Republic: American Scientific and Learned Societies from Colonial Times to the Civil War*, eds. Alexandra Oleson and Sanborn Conner Brown (Baltimore: Johns Hopkins University Press, 1976). Professionalization of the sciences was accompanied by specialization of the professionals on a specific aspect of their profession. For more on specialization, see John Higham, "The Matrix of Specialization," in *The Organization of Knowledge in Modern America, 1860-1920*, eds. Alexandra Oleson and John Voss (Baltimore: Johns Hopkins University Press, 1979).

nature-study and elementary science to warrant separate names, and many threw their weight behind the term that created a decided break from science, at least in name.⁴⁷

As nature-study professionalized and organized it became primarily controlled by people with a scientific background. Even though this group was committed to the new discipline, they continued to link it with science in order to give nature-study some association with the values of science and hence, respectability. The fear was that if nature-study was not in some way linked to science, that educators would make it overly emotional and sentimental. Thus, another layer to the debate over nature-study was over how subjective and imaginative it should be. Again the discussants in the educational and scientific journals fell along a continuum, with a factual and rational approach advocated at one end and an imaginative and emotional approach at the other. Liberty Hyde Bailey found a middle ground in the nature-study debate. He advocated a separation from science in name, methods, and to some extent, even purpose, but he also cautioned against nature-study becoming overly sentimental. His middle ground stance was informed by the realization that young children were mentally and emotionally different than adolescents or adults; therefore a more imaginative approach was pedagogically appropriate. He also realized that that a person's relationship with nature was formed in youth and by teaching children to love and respect nature in childhood, these values would be carried over into

⁴⁷ Others feared that nature-study was a fad and were reluctant to get on board because they feared that any progress that was made in incorporating nature education into the classroom might be lost if the "fad" disappeared.

adulthood. Given the environmental problems the next generation was facing, an informed and sympathetic populace was becoming increasingly desired.

Historians of science generally assume that the modern scientific world was created by adults, for adult consumption, but I agree with W.H. Brock's statement that "the growth of modern science and medicine and their technical exploitation cannot be fully understood without considering how their curricula are learned and acquired by one generation after another."⁴⁸ Understanding the debate over the relation between nature study and science and the efforts to define the former is crucial to understanding larger cultural attitudes toward science as well as the attitudes of the scientists themselves. While Brock's statement is true, it assumes that science and an education steeped in the values of science were the only alternatives. At various periods in history this was not the case; some individuals became more ambivalent about the consequences of science and rationality and they suggested an alternative value system and approach toward nature.⁴⁹ These alternative values and approaches were not necessarily a rejection of science, but often they represented

⁴⁸ W.H. Brock, "Science Education," in *Companion to the History of Modern Science*, ed. Robert C. Olby (New York: Routledge Press, 1990), 946-959.

⁴⁹ The pendulum of nature education tends to swing through modern history. In the nineteenth century, Romantic poets, such as William Wordsworth and Samuel Taylor Coleridge, argued that nature education should be an integral part of a child's education. A better understanding of nature was only part of the equation; these poets believed that allowing a child to experience nature was a boon to their mental and spiritual development and also a critique of the traditional system of instruction that placed emphasis on rote memorization rather than imagination. Alan Richardson, *Literature, Education, and Romanticism: Reading as Social Practice, 1780-1832* (Cambridge: Cambridge University Press, 2004).

recognition that science, along with its values and methods, was not always the most appropriate means of understanding the natural world, especially when it came to children. Ambivalence toward science was not reflected in the curriculum of the institutions of higher learning, although this is where many of the advocates of the alternative approaches were working. The efficacy and importance of science and a proper education in the sciences was not being questioned at the university level. Instead a scientific approach was questioned in relation to the institutions commonly held to be outside of the boundaries of modern science, such as the formal and informal education of children.⁵⁰ The nature-study debate of the late-nineteenth and

⁵⁰ Sally Gregory Kohlstedt argues that an understanding of science education, in its various settings, is important in understanding the history of science. Sally Gregory Kohlstedt, "Parlors, Primers, and Public Schooling: Education for Science in Nineteenth-Century America," *Isis* 81 (1990): 425-445. Indeed, historians of science have had to explore what Steven Shapin has called the "channels of communication between science and the public" -- including books, popular magazines, and educational curricula -- in order to more fully understand the value of science in the public sphere. Steven Shapin, "Science and the Public," in *Companion to the History of Modern Science*, ed. Robert C. Olby (New York: Routledge Press, 1990), 990-1007, 1000. Also helpful is Greg Myers' article on the role that fiction played in teaching both women and youth about natural knowledge in the nineteenth century, allowing us to examine "how scientific culture is presented to those presumed to exist outside it." Greg Myers, "Science for Women and Children: The Dialogue of Popular Science in the Nineteenth Century," in *Nature Transfigured: Science and Literature, 1700-1900*, eds. John Christie and Sally Shuttleworth (Manchester: Manchester University Press, 1989), 171-200, 172. Anne Secord suggests that the concept of popular culture represents a social construct and should be eliminated from the historian's vocabulary. Anne Secord, "Science in the Pub: Artisan Botanists in Early Nineteenth-Century Lancashire," *History of Science* 32 (1994): 296-315. Katherine Pandora suggests that historians examine the representations and understanding of science within "vernacular culture" in order to get a richer understanding of the meanings attached to it outside of professional arenas. By examining the "intellectual commons" where non-professionals aired their assumptions about science and scientists, historians can better understand the meaning and value of science in

early twentieth centuries was a prime display of ambivalence about science expressed by both scientists and educators. An appreciation of the attitudes that both scientific insiders and outsiders, people with a scientific background and those without respectively, displayed about the role of science in the education of young children allows us further insight into what they believed were the limitations of science. Further, it demonstrates that science and scientists had to abandon, or at least mask, the scientific language in order to maintain control over the curriculum. And finally, it demonstrates that some scientists took the scientific evidence, garnered by psychologists through child-study, seriously despite the fact that it weakened their control over the classroom curriculum at the elementary grade level.

Defining Nature-Study

Science and scientific knowledge have been foundational in the training of the American citizen since the colonial era.⁵¹ By the late nineteenth century, science was becoming the “characteristic intellectual activity of modern civilization” and

American culture and not rely solely on the opinions and rhetoric of the scientists. Pandora, "Knowledge Held in Common."

⁵¹ For more on early American science see: George H. Daniels, *American Science in the Age of Jackson* (New York: Columbia University Press, 1968), John C. Greene, *American Science in the Age of Jefferson*, 1st ed. (Ames: Iowa State University Press, 1984), Sally Gregory Kohlstedt, *The Formation of the American Scientific Community: The American Association for the Advancement of Science, 1848-60* (Urbana: University of Illinois Press, 1976), and Alexandra Oleson and Sanborn Conner Brown, eds., *The Pursuit of Knowledge in the Early American Republic: American Scientific and Learned Societies from Colonial Times to the Civil War* (Baltimore: Johns Hopkins University Press, 1976).

educators and scientists were calling for a more science-based curriculum in the elementary schools.⁵² In fact, educators were calling for more natural science in the common schools in the 1880s. For example, in the journal dedicated to her profession, *Education*, Mary Alling called for more natural science in the common schools in 1881.⁵³ Alling felt strongly that the standard curriculum of spelling, geography, and arithmetic was not meeting the needs of the citizens that the schools were developing; she felt that by adding natural science to the curriculum students would be prepared to be good citizens.⁵⁴ Scientists also demanded more science in the

⁵² W.T. Harris, "The Study of Natural Science--Its Uses and Dangers," *Education* 10, no. 5 (1890): 278-287, 278. As early as the mid-nineteenth century, science was promoted by some Americans as one of the most important tools a person would need to acquire in order to maneuver in the increasingly complex modern industrial world. Sally Gregory Kohlstedt has noted that science became "part of the culture demanded by modern life. The push for modernity impelled colleges toward more science in the curriculum and more facilities for such study." Kohlstedt, "Parlors, Primers, and Public Schooling." The aforementioned sentiment can be found in contemporary articles such as Ira Remsen, "The Age of Science," *Science* 20, no. 498 (July 1904): 65-73. In his Commencement address at the Worcester Polytechnic Institute, Remsen noted that "the reason for calling this age in which we live the scientific age is found in the fact that scientific work is much more extensively carried on at present than at any time in the past, and further, the world is beginning to reap the rewards of this work." (p. 69)

⁵³ Mary Alling, "Natural Science in the Common Schools," *Education* 2 (1881): 601-615.

⁵⁴ A crucial condition that must be met for a person to become a good citizen was "good health" which she considered a "prerequisite of the power of self-guidance." An understanding of what constitutes good health and how to attain it through knowledge of the body and hygiene was the most important achievement for an education in natural science. When good health is established and maintained the student can then go on to acquire the other elements of good citizenship: "industry and frugality, patriotism, intelligence, and morality." (p. 605) Alling, like many other Progressives, was concerned about the effects that immigration, urbanization, and modernization were having on the American citizen.

educational curriculum. Physicist and engineer Charles R. Mann argued for a more central place for science in the educational curriculum of children from kindergarten through college.⁵⁵ The rationale for his declaration was that science had become integral to civilization and humans were lagging behind because of their deficits in scientific knowledge and practice. Science was deemed necessary in order to assist citizens navigating the modern industrialized world. A scientific education was a tool for change that aided the pupil in coping with everything from sanitation problems within the cities to increasing crop yields in the country.⁵⁶ But science was not useful simply for plotting a course through the modern industrialized world, for it could create informed citizens capable of changing their surroundings.⁵⁷ In his discussion of biology in New York City in the early twentieth-century, Philip Pauly

⁵⁵ C.R. Mann, "Science in Civilization and Science in Education," *The School Review* 14 (1906): 664-670.

⁵⁶ Brock, "Science Education.", Stanley Guralnick, "The American Scientist in Higher Education, 1820-1910," in *The Sciences in the American Context: New Perspectives*, ed. Nathan Reingold (Washington: Smithsonian Institution Press, 1979), and Scott L. Montgomery, *Minds for the Making: The Role of Science in American Education, 1750-1990* (New York: Guilford Press, 1994). This argument was made by contemporaries as well: see E. R. Whitney, "Nature Study as an Aid to Advance Work in Science," *National Educational Association—Journal of Proceedings and Addresses* 43 (1904): 889-894.

⁵⁷ Harvey Green has also argued that science, namely the physical principle of entropy, provided a solid explanation for the degenerative nature of nineteenth and twentieth century America; thus, science moves beyond the purview of the natural world to the human realm. Harvey Green, "Scientific Thought and the Nature of Children in America, 1820-1920," in *A Century of Childhood, 1820-1920*, ed. Mary Lynn Stevens Heining (Rochester, NY: Margaret Woodbury Strong Museum, 1984), 121-137.

has argued that the newly introduced focus on the biology curriculum in high school created “a modern male—an individual whose physiological and intellectual development converged, who understood his place in the world around him, and could act intelligently to improve it.”⁵⁸

Scientists such as C.C. Wilson in 1898 claimed that a scientific education prepared students to live in the modern world by teaching them the “discipline of the powers of observation, of logical thought, and accurate description.”⁵⁹ Further, a scientific education could prepare students for global industrial competition.⁶⁰ Scientific study could aid children in the development of their powers of observation and reason, and encouraged accuracy. Children would become more interested in and observant of their surroundings. Finally, according to E. R. Whitney, the Head of the Science Department at the high school in Binghamton, New York, an early preparation in science prepared the child to live in the modern scientific world and more efficiently solve the problems of that age.⁶¹ Whitney concluded that a proper scientific education could also enhance a child’s sympathy toward the natural world,

⁵⁸ Philip J. Pauly, "The Development of High School Biology: New York City, 1900-1925," *Isis* 82, no. 314 (1991): 662-688, 663. Pauly’s article was later developed into a chapter of his book: Philip J. Pauly, *Biologists and the Promise of American Life: From Meriwether Lewis to Alfred Kinsey* (Princeton, N.J.: Princeton University Press, 2000).

⁵⁹ C.C. Wilson, "What Is the Consensus of Opinion as to the Place of Science in the Preparatory Schools?" *The School Review* 6 (March 1898): 203-221, 205.

⁶⁰ *Ibid.*

⁶¹ Whitney, "Nature Study as an Aid to Advance Work in Science."

but this benefit was secondary at this juncture because these professionals were mainly concerned about children's lack of natural knowledge as evidenced by Hall's 1883 article.

Nature-study did not develop as a singular movement with a common approach toward a universally held goal. It became, instead, a movement with many approaches and multiple desired goals, especially in the early years of the development of the program.⁶² There were those who believed that nature-study was not science, but a completely different endeavor, in that while it might appeal to the rational side, it was ultimately geared toward the emotional faculties. Others saw nature-study as natural science, diluted for younger children, but meant to prepare children for studying science in the latter grades by teaching the skills of observation, fact collection, and reasoning. Nature-study as elementary science was especially appealing because of the increasing importance of science in the later-nineteenth and early-twentieth centuries.

In the formative period of nature study, between 1880 and 1905, both educators and scientists weighed in on the debate with equal intensity. In fact, early on both groups tried to define nature study according to the values of their

⁶² Orra E. Underhill places nature-study in the fuller context of and views it as a minor distraction to the advancement of science education in the elementary schools. He notes that the terms nature study and elementary science were interchangeable in the final years of the nineteenth century and their subsequent separation in use indicated a separation in approaches. Nature-study encourage a less rational and more emotional approach while elementary science required the use of reason in order to classify knowledge and make generalizations from the observations. Orra E. Underhill, *The Origins and Development of Elementary-School Science* (Chicago: Scott, Foresman and Company, 1941).

professions. Educators, influenced by the burgeoning knowledge of pedagogy and child psychology, sought to reorient the curriculum to meet the educational needs of children. Child-study experts argued that young children were imaginative and emotional, and the practitioners sought to remodel the curriculum to reflect this reality. Scientists, on the other hand, sought to maintain some control over what people at all levels, including grade-school children, were learning about the natural world. What ensued was a lively discussion over the methods and purpose of nature-study in both educational and scientific journals.

The early discussions occurred primarily in educational journals such as *Education* and *The School Review*, as well as the *National Education Association Journal of Proceedings and Addresses*, which was a compilation of presentations given at the annual meetings of the National Education Association (NEA). These venues were the place for professional educators to express their concerns over the direction of science and nature education and of science itself. Educators did not have any influence over the scientific world or the curriculum in the universities, but they exerted control in the one arena that they could, and expressed their ambivalence about science and scientists in their plans for elementary-aged children. For example, at the 1896 meeting of the NEA in Buffalo, New York, Dr. Martin G. Brumbaugh, the President of Juniata College and a professor of pedagogy in the Department of Philosophy (and later the Governor of Pennsylvania), told his audience that in the previous decade nature had been studied according to “formulae,” with the

information being passed from the scientist down to the child. The consequence for the child was that

[a] teacher talked to the child; and the singing stream, the chatting crow, the murmuring pines, the articulate silences, were commanded to be still. Children consumed precious time committing senseless formulæ about things, and nature was parsed and analyzed as logically as a sentence from Cæsar or Homer.⁶³

The systematic approach toward nature that professional scientists espoused should be reserved for high-school aged students and above, and for grade school children he advocated a more “artistic study of nature.”⁶⁴ Brumbaugh did not reject science but instead argued that an “appreciative contemplation of nature” would lay the foundation for a sympathetic understanding and love of nature which he considered a prerequisite to a career in science.⁶⁵

During the discussion of the session two attendees responded to Brumbaugh’s sentiment with wholehearted agreement. The first was Eva Kellogg, the Editor of *Primary Education*, who made the following plea: “Let us away with this attempt to materialize the spiritual in nature study.”⁶⁶ Nature study should not be “analyzed, diagrammed, memorized, added, subtracted, multiplied, divided, partitioned, or

⁶³ M. G. Brumbaugh, "The Function of Nature in Elementary Education," *National Educational Association--Journal of Proceedings and Addresses* (1896): 141-151, 141-142.

⁶⁴ *Ibid.*, 142.

⁶⁵ Brumbaugh, "The Function of Nature in Elementary Education," 142.

⁶⁶ Eva D. Kellogg, "Discussion," *National Educational Association--Journal of Proceedings and Addresses* (1896): 156.

measured.”⁶⁷ Renowned psychologist G. Stanley Hall was also in the audience and echoed Kellogg’s anti-materialistic sentiment. Hall posed the question “what is nature?” to his colleagues. His response was that nature was

[t]he great Mother of us all, the reservoir of every kind of force, the force that makes the electric light, that makes my heart pulsate, my food digest, that makes my voice, that makes my thought, that makes anything, everything. Nature is not dirt; it is not material. There is no scientific man today in all the universities of the country – save perhaps two or three, as far as my inventory goes – that is a materialist as the term is sometimes used. Materialism is as dead as dirt.⁶⁸

Hall argued further that the result of nature study should be love of nature, which again provides a firm foundation for science as well as religion. The participants at this meeting were concerned that a scientific approach to nature study would squash any spiritual connection that they hoped the child would make. Science was useful for understanding and solving practical problems, but it was deficient in matters of the heart.

There also were concerns about the methods of nature study in the formative years amongst educators. Specifically the concern was that nature study not share science’s method. Augusta Tovel of the St. Louis Normal School recognized that psychology and the changing needs of the people necessitated a change of method of nature education. She also recognized that a scientific background was necessary to

⁶⁷ Ibid.

⁶⁸ G. Stanley Hall, "Discussion," *National Educational Association—Journal of Proceedings and Addresses* (1896): 156-158,157.

give workers the advantage in the industrial world.⁶⁹ These two needs were seemingly in conflict. But Tovel argued that nature study was the perfect subject to bring out the emotional and imaginative traits in children and therefore should not be overly factual. She also believed that children could not reason well enough to benefit from scientific nature study. Flora J. Cook, also an educator in the Midwest at the Chicago Normal School, concurred. Cook wrote that “[t]he little children cannot, and we would not force them, too early, to understand God’s great law of harmony in nature.”⁷⁰ Children should not learn the facts of nature like they would in a science classroom, instead “[t]he test of a year’s work cannot be estimated in the facts or knowledge gained by the children, but in their habits of work, love, sympathy, and desire to know more of everything around them.”⁷¹ These educators recognized the limitations of the child but also the limits of science in teaching children to love and sympathize with nature.

Along with criticism of a fact-collection approach to studying nature, there were educators who argued that students should not get bogged down in overly-factual language. Katherine Dolbear, a high school teacher in Holyoke, Massachusetts, encouraged elementary school teachers not to overwhelm students

⁶⁹ Augusta Tovel, "A Plea for Increased Study of Nature in the Common School," *Education* 8 (1888): 310-314.

⁷⁰ Miss Flora J. Cook, "The Place of Nature Study in Primary Work," *National Educational Association—Journal of Proceedings and Addresses* (1896): 519-525, 525. The religious overtones found in Cooks’ article are not so surprising when placed in the overall context; many authors in the educational journals, both educators and scientists, viewed the study of nature as an attempt to understand God’s law.

⁷¹ *Ibid.*, 525-526.

with facts and scientific names. Education had moved away from the rote memorization of facts she claimed; students should know how to apply these facts in an understanding of “nature as a whole rather than in parts.”⁷² Henry L. Clapp, the Master of the Gorge Putnam School in Boston, went so far as to exclaim that the “letter killith the spirit.”⁷³ As a precaution to avoiding subjecting youth to overly scientific language, James G. Needham, an entomologist at Cornell University, relegated the scientific names of the organisms to the back of his book *Outdoor Studies*, “lest the big names frighten any one.”⁷⁴

In an article for *Popular Science Monthly*, Clapp rejected the idea that nature education was solely the domain of science professionals.⁷⁵ Children should not be led through the material by the teacher to reach the scientist’s conclusions. This “top-down” method of instruction put a stop to any original exploration and bored the child.⁷⁶ Children should learn about the wonders through guided exploration but not

⁷² Katherine E. Dolbear, "Nature Study for the Graded Schools," *National Educational Association--Journal of Proceedings and Addresses* (1900): 600-608, 602.

⁷³ Henry Lincoln Clapp, "Real and Sham Observations by Pupils," *Education* (1892): 271-273, 272.

⁷⁴ James G. Needham, *Outdoor Studies; a Reading Book of Nature Study* (New York: American Book Company, 1898). Needham’s book is meant for students beyond the primary grades; but even these older, more mature students, according to Needham, should not be overwhelmed by scientific names.

⁷⁵ Henry Lincoln Clapp, "The Scientific Method with Children," *The Popular Science Monthly* 44 (November 1893): 57-68.

⁷⁶ Again I am borrowing the description used by Ellen Doris. Doris, “The Practice of Nature-Study”.

simply led to the answers. Clapp further criticized those who held that the progression of the study of nature that would be the most logical to the adult should naturally be extended to the education of the child. For example, he noted that there was considerable disagreement on the proper sequence in which to introduce children to different topics. When introducing a student to plants, systematic teachers believed it best to begin with the roots and work from the ground up, finishing with the flowers and fruits. Clapp argued that teachers should begin with the things that would most interest the child, the flowers and fruits. Children, Clapp argued, must be introduced to the object that will hold interest rather than following what may be considered a logical sequence. He recalled a conversation he had with a principal regarding a lecture they both witnessed where the teacher used the “question-and-answer method” to lead pupils through the material rather than allowing them to independently investigate nature and come to their own conclusions. He noted that the principal responded in the following manner:

‘This brought us to the end of a *very logical lesson*, but one which was at the same time one of the most mechanical, most wooden, most stupid and profitless lessons to which I ever listened. It was all right according to the letter of the law, but where was the spirit of education? I need not tell you of the unrest, the inattention, the new channels of activity that the children opened up for themselves, the imitation, the lack of spontaneity, the utter inability to hold the mind to this dreary treadmill.’⁷⁷

⁷⁷ Clapp, "The Scientific Method with Children," 65.

This approach to teaching denied children the spontaneity of investigation that was so natural to them, according to this view. He appealed to teachers to consider their audience, their interests, and their needs, rather than assuming that the logical, scientific approach was the best.

In 1895 Wilber Jackman lamented the fact that nature-study was in a state of chaos because there were too many opinions involved.⁷⁸ Ironically the state of nature-study became even more chaotic when, in 1902, scientists weighed in regarding the definition of nature study. Scientists early on had been interested in the character of the discipline but their more active involvement was prompted by two related events in 1893. The first was the economic downturn of 1893 that resulted in a four year depression.⁷⁹ Prompted in part because of the depression and the belief that better education might remedy such problems, the National Education Association formed the Committee of Ten to examine the secondary school curriculum. The committee recommended a more prominent plan for natural science in the secondary school curriculum. Further, the committee articulated what it believed the role of

⁷⁸ Wilbur S. Jackman, "What Has Been Accomplished in Coordination in the Field of Natural Science," *National Educational Association--Journal of Proceedings and Addresses* (1895): 97-103. Jackman's sentiment was further echoed in two dissertations analyzing the early years of nature-study: Minton, "The History of the Nature-Study Movement", and Olmsted, "The Nature-Study Movement in American Education".

⁷⁹ Unfortunately the Panic of 1893 and the subsequent depression is greatly understudied. One useful source that addresses the economic root of the crisis is: Douglas W. Steeples and David O. Whitten, *Democracy in Desperation: The Depression of 1893*, Contributions in Economics and Economic History; No. 199 (Westport, CT: Greenwood Press, 1998).

elementary schools should be in the preparation of students. In the report of the sub-committee on Natural History they stated:

The conference on Natural History unanimously agreed that the study of botany and zoology ought to be introduced into the primary schools at the beginning of the school course, and be pursued steadily, with not less than two periods a week, throughout the whole course below the high school. In the next place they agreed that in these early lessons in natural science no text-book should be used; but that the study should constantly be associated with the study of literature, language, and drawing... like the reports on Physics, Chemistry, and Astronomy, the report on natural history emphasizes the absolute necessity of laboratory work by the pupils on plants and animals; and would have careful drawing insisted on from the beginning of the instruction.⁸⁰

Because the committee provided a link between science study in the higher grades and natural history in the lower grades, this opened the door for scientists to exert control over the elementary school curriculum.⁸¹

In June 1902, William J. Beal, professor of Botany at Michigan Agricultural College and mentor of Liberty Hyde Bailey, posed the question: "What is Nature-study?" in the journal *Science*.⁸² Part of Beal's motivation for posing this question was his frustration over the myriad definitions of nature-study. But his goal was also an effort to establish a scientific precedent for nature-study through the authority of

⁸⁰ The report of the Committee of Ten is partially reprinted in George Willis, *The American Curriculum: A Documentary History* (Westport, CT.: Greenwood Press, 1993), 90-91.

⁸¹ The reforms of the Committee of Ten were later deemed as a failure because they ultimately did not meet the needs of the changing community. For a more in-depth discussion of this failure see Kliebard, *The Struggle for the American Curriculum*.

⁸² W.J. Beal, "What Is Nature Study?" *Science* 15, no. 390 (1902): 991-992.

his mentor Louis Agassiz. Beal claimed that Agassiz was the first to introduce nature-study to Americans and that it had been passed down from year to year through Agassiz's disciples and their students. Further, Agassiz had set the precedent for the method of nature-study that he implored teachers to follow. But Beal was concerned that the practitioners of nature-study had strayed too far from Agassiz's approach because of the introduction of fancy into the literature and curriculum.

Since Jackman's first nature-study volume in 1891 the market for nature-study literature and texts had exploded. Scientists, educators and nature writers were all capitalizing on the demand for nature books and guidance for teachers. Beal found some of these books dangerous. In particular, he was very critical of nature-study texts that were fanciful:

With much that is good in nature-study comes much that is positively injurious, and unfortunately large numbers are unable to distinguish between the true and the false. One writes a little book giving it some fancy title, distorts the drawings of some seed and seedlings, inserting outlines of children's faces thereon; *she* writes some marvelous stories, and all those to help arouse and retain the interest of the child.

I have in my possession a neat drawing made by a student. He made two drawings to represent two honey bees just about to visit apple blossoms. The bees are not alike; each has two wings only; the heads and legs are unlike anything ever attached to bees. The apple blossoms are five-lobed (gamopetalous), with three stamens growing from the base of each lobe of the corolla. He has made drawings of imaginary insects seeking imaginary nectar from imaginary flowers. This student was trained in a state normal school. Such caricatures are absolutely worthless, in fact injurious, to any young person who makes them or even looks at them.⁸³

⁸³ Ibid., 992. The emphasis is mine.

It is important to note here that Beal associated fanciful and inaccurate representations of nature with female nature writers and teachers. Women had increasingly entered the teaching profession and replaced men in the latter years of the nineteenth-century in part because they could be paid less. Many scientists and administrators felt that they were ill equipped for properly educating students in the sciences. Beal feared that because women were prone to sentimentalism that they were likely to bring these traits into the classroom and use sentimentalism to teach their pupils.

By default, science was linked with masculinity, in part because men were the primary producers of scientific knowledge, but also because fancy and sentiment were linked with femininity.⁸⁴ Subjectivity and sentimentalization were considered feminine traits and thus rejected by the male-dominated scientific profession. Ann Douglas argues that sentimentality was part of a larger national trend whereby women who possessed little control in the industrializing world sought to feminize and sentimentalize American culture.⁸⁵ Feminine values permeated the arts and literature, areas where women still had control, in order to counter the masculine values of

⁸⁴ Katherine Pandora has noted that one of the primary reasons that Luther Burbank was not considered a scientist was because his activities were closely linked with the feminine. For example, his research was considered “emotional,” he worked from his home, and he was closely associated with children because of his interest in educating and caring for them. Pandora, “Knowledge Held in Common.” For more on the gender divide with regards to science education, see Kimberley Tolley, *The Science Education of American Girls: A Historical Perspective*, Studies in the History of Education (New York: Routledge Falmer, 2003).

⁸⁵ Ann Douglas, *The Feminization of American Culture* (New York: Anchor Press/Doubleday, 1988).

aggression and competition. However, these principles were devalued in the modern masculine world, much like fancy and sentiment were devalued in the modern scientific world. It would be simple to draw gendered lines and argue that only men devalued feminine values, but Nina Baym demonstrates that this was not the case. She notes that some women who were affiliates of science, like Sarah Hale and Hannah More, argued that learning science would make the female mind more masculine and less sentimental and frivolous.⁸⁶ And according to Almira Phelps, education in the sciences was a “cure” for the emotionality of womanhood.⁸⁷

Beal was also critical of the education that these teachers were receiving at the state normal schools. He claimed that the student who drew the erroneous representation of apple blossoms and bees was “trained in a state normal school. Such caricatures are absolutely worthless, in fact injurious, to any young person who makes them or even looks at them.”⁸⁸ The training that teachers received was a central issue to the profession in the nineteenth and twentieth centuries. One solution was the development of Normal Schools, or colleges to train primarily teachers in the

⁸⁶ Nina Baym, *American Women of Letters and the Nineteenth-Century Sciences: Styles of Affiliation* (New Brunswick, N.J.: Rutgers University Press, 2002). Londa Schiebinger has examined the gendered nature of the profession of science but also the subjects of scientific inquiry in the early modern period: Londa L. Schiebinger, *The Mind Has No Sex? Women in the Origins of Modern Science* (Cambridge: Harvard University Press, 1989), and Londa L. Schiebinger, *Nature's Body: Gender in the Making of Modern Science* (Boston: Beacon Press, 1993). Many of the gendered assumptions that existed in the early modern period were retained into the early twentieth-century.

⁸⁷ Baym, *American Women of Letters and the Nineteenth-Century Sciences*.

⁸⁸ Beal, "What Is Nature Study?" 992.

elementary grades, in the late 1830s. In the early twentieth century, the normal school education came under fire by proponents of nature-study. What is ironic is that many did not agree as to the culprit for the deficiencies in the normal schools. Some believed that their instruction fell short of the science instruction that a student would receive at a regular university, while others felt that the problem was that the education they received failed to take into consideration psychology and pedagogy. Still others believe that the fault lay in the teacher's desire to be an authority. Beal picked up this topic in the same year that he tried to pin down a definition for nature-study.⁸⁹ His first target was a popular nature-study book by Clifton H. Hodge entitled *Nature Study and Life* that had been published in that same year.⁹⁰ While he stated that Hodge's book "is apparently the best one of many books" dealing with rural life, he argued that the length was prohibitive (500 pages) for training teachers who were going to use the book for instruction.⁹¹ He exhorted that even students that he had expertly trained in his forty years of service would have a difficult time teaching all of the subjects in Hodge's book. But he still believed that the adequate preparation of teachers required them to "do considerable real good work and not spend very much time on advice about methods."⁹² Next he pointed fingers at the teachers themselves

⁸⁹ W. J. Beal, "Nature Study," *The Independent*, 11 September 1902, 2178-82.

⁹⁰ Clifton Fremont Hodge, *Nature Study and Life* (Boston: Ginn & Company, 1902).

⁹¹ Beal, "Nature Study," 2178.

⁹² *Ibid.*, 2182.

for their penchant for providing fanciful and misguided information. In a biting tone he claimed that teachers do most harm when they willfully misinform students.

If teachers could only keep their mouths shut to most of the numerous questions asked by eager children more of them would succeed; but they won't do that. Most people delight to answer questions; it displays their wisdom; it is a satisfaction to grant favors of this kind, but when they attempt to answer fifty or more questions a day concerning such a great variety of things, many of the answers will be mere guesses, and will do much more harm than good. Caution, care, patience, reticence are needed in teachers of nature... Teachers must not pretend to know all nature: if they do they are mere pretenders, for no one knows half there is to be learned about the common plants and animals.⁹³

Worse yet is when teachers used inappropriate language:

Don't waste energy in giving all sorts of namby pamby or baby names to things to arouse the fancy of pupils, such as "Baby beech leaves half awake." Don't be afraid of introducing now and then a technical word when needed, as children can learn them more easily than most older people; it won't hurt them and they like it.⁹⁴

Beal favored training for nature-study teachers that was scientific and accurate so as they would not lead their students astray.

Eleven years earlier the educator, Clapp, blamed the lack of proper teaching on the teacher education to be found at both the normal and scientific schools. Graduates from both of these schools were responsible for the education of children, but until the relatively recent past, neither group had much opportunity for interaction with elementary school children to understand how they learn. His harshest

⁹³ Ibid., 2180.

⁹⁴ Ibid.

criticisms were reserved for graduates of the scientific schools who went into teaching without understanding the principles of education. These graduates were considered more harmful in the classroom because they “tend to bring science work into disrepute and to make it seem impossible to any but specialists.”⁹⁵ The specialization of language and procedure that was integral to the professionalization of science had the proper effect of distancing professionals from non-professionals; however, in the case of nature education, this backfired because it resulted in the alienation of future supporters and practitioners. The problem of how best to teach children about the natural world fell into the hands of the superintendents of schools and, according to Clapp, these were the people who most effectively worked toward a solution because they were primarily concerned with the education of the children in their care rather than having a professional axe to grind. Clapp sent a very clear message that scientific training was not qualification enough to decide what and how children should learn about nature; proper pedagogical training was more important than scientific training because if one cannot reach children at their appropriate level, one cannot teach them effectively.

Training for nature-study teachers was an oft discussed subject and it became the focus of the 1908 conference of the American Nature Study Society in Cleveland. Here the sentiment was different than Beal’s; the educators and scientists at this conference felt that nature-study instruction could be bolstered by the recognition that the needs of teachers were different from the needs of scientists. Oris P. Dellinger,

⁹⁵ Clapp, "The Scientific Method with Children," 59.

professor of Biology at Winona Normal School, and later President of Kansas State Manual Training Normal School in Pittsburg, stated that “[t]he best training to make a good nature-study teacher is, of course, different from that needed to produce a good botanist or zoologist.”⁹⁶ The solution to the problem was to design content courses specifically for teachers of nature-study instead of having them take courses aimed at future biologists, horticulturalists, and farmers. Maurice Bigelow, a Professor in the Department of Biology at the Teachers College at Columbia University, concurred; the technical science courses in the universities and colleges “does not give the proper point of view and knowledge of needs of elementary schools.”⁹⁷ Normal schools and universities began to create natural science courses that also addressed the psychology of the child and pedagogy.⁹⁸

Beal’s inquiry began a serious examination of nature-study by natural scientists from around the nation. In the December 5th edition of *Science*, seven highly-regarded scientists responded to Beal: Alpheus S. Packard, an entomologist and invertebrate zoologist at Brown University; John M. Coulter, a botanist at the University of Chicago; Clarence P. Gillette, an entomologist at Colorado State

⁹⁶ O.P. Dellinger, "Training Teachers for Nature-Study," *The Nature-Study Review* 4 (1908): 176-178, 176.

⁹⁷ Maurice A. Bigelow, "Training Teachers for Nature-Study," *The Nature-Study Review* 4 (1908): 178-182, 181.

⁹⁸ Wilbur Jackman detailed the course of study for future teachers of nature study in the College of Education at the University of Chicago. These courses combined science content and pedagogy. Wilbur S. Jackman, "Courses in the Teaching of Natural Science in the College of Education," *The Elementary School Teacher* 4, no. 2 (1903): 102-106.

University; William M. Davis, a geologist and physical geographer at Harvard and Assistant Geologist for the U.S. Geological Survey; Addison E. Verrill, an invertebrate zoologist at Yale and curator of zoology at the Peabody Museum; David Starr Jordan, an ichthyologist and first President of Stanford University; and Thomas H. Macbride, a botanist and future President of the University of Iowa.⁹⁹ It is important to note that these scientists all held positions at universities where their primary role, after research, was training the next generation of scientists. While pedagogy may have factored into their definitions of nature-study, it was secondary to upholding the values of the profession that they represented. Scientists sought to lay claim to their authority in all aspects of teaching natural knowledge, including that in the elementary schools, by insisting on a scientific method and a scientific outcome.

The representatives of the scientific profession agreed that the method of nature-study should resemble the method of science. Most of them believed that first-hand observation of nature was an essential component of nature-study, including Packard and Jordan, who were students of Agassiz. Packard argued that nature-study was “the first step toward natural science” and that a child should be taught to “observe, experiment and reason from the facts he sees.”¹⁰⁰ He pointedly noted that nature-study played an essential role in “teaching a child *what a fact is* in these days

⁹⁹ W.J. Beal, A.S. Packard, John M. Coulter, C.P. Gillette, W.M. Davis, E.A. Verrill, David Starr Jordan, and Thomas Macbride, "What Is Nature Study?" *Science* 16, no. 414 (1902): 910-913. Verrill was incorrectly identified as E.A. Verrill in the *Science* article, it should instead read A.E. Verrill.

¹⁰⁰ *Ibid.*, 911.

of Christian Science and other fads.”¹⁰¹ Davis held that nature-study should use the tools of the scientific method in their elementary forms, such as “generalization, invention of explanation, test of explanations by deduction, appeal to experiments, the need of a critical and unprejudiced judgment in reaching conclusions, revision of work and suspension of judgment in doubtful cases.”¹⁰² While these scientists recognized that children could not achieve the sophistication with the scientific method of which high-school and college students were capable, they were firm in their belief that nature study should use a scaled-down version of the same method.

Like Beal, these scientists were also clear that nature-study should not be sentimental or fanciful because these approaches to understanding nature were not part of the values of scientific inquiry. William M. Davis believed that the study of nature should be “scientific and disciplinary” rather than filled with “emotional sentiment”.¹⁰³ Nature-study should lead to a “clear understanding of the order of nature, based not on authority but in the cultivation and use of a keen, unprejudiced, sympathetic reason.”¹⁰⁴ It is not that Davis believed that one should never approach nature with emotion, but that there was a place for that attitude and it was not in the sciences. Instead, “emotional sentiment, a subject responsive in so far as it is excited by natural phenomena, is better cultivated in the appreciative study of the art and

¹⁰¹ Ibid. The emphasis is Packard’s.

¹⁰² Ibid., 911-912.

¹⁰³ Ibid, 912.

¹⁰⁴ Ibid.

literature than in nature-study.”¹⁰⁵ Objects and natural phenomena should be observed and evaluated to glean knowledge and to make generalizations, not to connect students spiritually to nature. David Starr Jordan went even further to state that nature-study should “exclude all fairy stories about animals and plants, all fantastic stories of creatures more or less imaginary, and should restrict the terms so as to include only such work as would bring the student face to face with realities.”¹⁰⁶ Science should be based on first hand observation and experimentation; if not based in fact, then it could no longer be called science, but instead fell into the realm of myth and fairy tale. The lone scientist in this set of articles who was willing to emphasize sentiment in nature-study was Thomas Macbride, who concluded that the goal of nature-study was sympathy with nature. It is “not botany; it is not zoology; although of course, not contravening either. But by nature-study we mean such a presentation, to young people, of the outside world that our children learn to love all nature’s forms and cease to abuse them. The study of natural science leads, to be sure, to those results, but its methods are long and have a different primary object.”¹⁰⁷

Scientists had given attention to the disconnect between science and nature-study before the 1902 article. In 1900, Charles B. Wilson, an invertebrate biologist who studied the copepods of the Woods Hole region but who also had an educational affiliation at the State Normal School in Massachusetts, claimed that the “lack of

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

harmony” between the two subjects was “a serious obstacle to any true progress.”¹⁰⁸ Wilson’s remarks formed his President’s Address at the 1900 meeting of the NEA as he was incoming President of the Department of Science Instruction. He indicated that scientists had distaste for nature-study in its present state:

Ask any college professor what he thinks of the nature work in our graded schools, and altho his inbred courtesy may restrain the sneer or the smile, yet his love for the truth will compel him to reply, as many of them do, that he would prefer to have his students receive no training at all rather than the one which they get in the graded schools.

He feels somehow that this nature work is mere child’s play, and he considers it worse than useless, because it inculcates into the child’s mind wrong principles, unscientific methods, and inaccurate data at the very period when that mind is most plastic and most receptive for such things.¹⁰⁹

Again the culprit was the unprepared teacher, not because she was unable to receive proper training, but because she felt that scientific work was too difficult for her comprehension so she would abandon it. Scientists like Wilson feared that the rampant misinformation that the teacher who was not properly trained was likely to provide would harm the development of the child’s critical scientific mind. They demanded accuracy at all levels because it was the surest way to achieve a well-informed populace and citizens who acted with a scientific mind.

As expected, professional scientists overwhelmingly supported the idea that nature-study should be taught according to the values of science. This is not to say

¹⁰⁸ Charles B. Wilson, "How Can Advanced Science in the College and University and Nature Work in the Graded Schools Be Rendered More Mutually Helpful?" *National Educational Association--Journal of Proceedings and Addresses* (1900): 592-600, 593.

¹⁰⁹ Ibid.

that all scientists supported this approach in all situations, but in the academic journals of their profession, they upheld the disciplinary values of rationality and objectivity, and a strict adherence to learning the facts of nature. Some of the scientists were hopeful that a scientific approach to nature would persuade the student to love nature; yet others were hopeful that it would encourage them to consider science as a career option.

The *Science* articles represented an attempt by scientists to strengthen the boundaries that existed between science and scientists, and the rest of American culture. By couching the nature-study method in scientific language—reason, fact, generalization—and associating it with an elementary form of science, the scientists brought nature-study into the realm of science. Nature-study was considered an extension of higher science teaching and thus under the purview of science. In his examination of the dynamics that constitute the cultural authority of science, sociologist Thomas Gieryn uses a map metaphor to describe the boundary work that separates science from culture. He claims that the

layered interpretations that surround scientists and scientific facts with a special believability often come in a rhetorical form best described as cartographic. ‘Science’ becomes a space on maps of culture, bounded off from other territories, labeled with landmarks showing travelers how and why it is different from regions of common sense, politics, white lab coats, laboratories, technical journals, norms of scientific practice, linear accelerators, statistical data, and expertise. They provide the interpretive grounds for accepting scientific accounts of reality as the most truthful and reliable among the promiscuously unscientific varieties always available. Maps of science get drawn by knowledge makers hoping to have their claims accepted as valid and influential downstream, their practices esteemed and

supported financially, their culture sustained as the home of objectivity, reason, truth, or utility.¹¹⁰

In part, the construction of boundaries was a product of the professionalization of the sciences; scientists sought to actively elevate their status and that of the knowledge they produced and the methods they used.¹¹¹ But it was also a product of the professionalization of educators who claimed that in addition to knowledge about nature, one needed proper pedagogical knowledge to best know how to guide the student. As educators stepped up to control the method of nature-study, some scientists viewed this as a challenge to their authority and a breach of their boundaries.

The story would be much simpler to tell if historians could pit the scientist against the educators in a battle over credibility, but there was an extensive “no-man’s land” between the two sides where the claims and credentials merge. It was not simply scientists who were objecting to the fanciful descriptions of the natural world, but also some educators and nature-writers. Further, it was not only educators and nature writers who argued the benefits of fancy, but also some scientists. Part of the

¹¹⁰ Thomas F. Gieryn, *Cultural Boundaries of Science: Credibility on the Line* (Chicago: University of Chicago Press, 1999), x.

¹¹¹ Much has been written about the process and consequences of professionalization; see Daniels, "The Process of Professionalization in American Science", Oleson and Brown, *The Pursuit of Knowledge in the Early American Republic*, Reingold, "Definitions and Speculations", and J.B. Morrell, "Professionalisation," in *Companion to the History of Modern Science*, ed. Robert C. Olby (New York: Routledge Press, 1990), 980-989. The process of professionalization was not restricted to the sciences; Robert Wiebe's *Search for Order* demonstrates that it was part of a larger dynamic of professionalization across modern life. Robert H. Wiebe, *The Search for Order, 1877-1920, The Making of America* (New York: Hill and Wang, 1967).

debate hinged on claims of expertise and the supremacy of the scientific method or pedagogical method, but it also centered on the values attached to both fact and fancy and the claims of efficacy for preparing a child to survive in the modern world.

After this initial offensive against a scientific nature-study by the educators and the denigration of a softer, more fanciful nature-study by the scientific community, the debate opened into an even more complex and chaotic discussion. During this full-scale discussion one could not easily predict which side a person was going to take based upon their profession. Not all scientists echoed the views of those before them that nature-study should be scientific and not all educators viewed the development of some scientific skills as being outside of the abilities of grade-school children.

Two years prior to the *Science* article, at the National Education Association's annual meeting, D. Lange, Supervisor of Nature-Study in City Schools in St. Paul, Minnesota, indicated that “nature-study as used in this paper is understood [as] the work in elementary science taught below the high school—in botany, zoölogy, physics, chemistry, and geology.”¹¹² At the NEA meeting in 1904, a high school educator weighed in on the debate. E. R. Whitney, Vice Principal and head of the science department at a high school in Binghamton, New York, was optimistic that nature-study, properly taught, could lead to advanced work in science. Nature study's primary purpose was to keep the child interested in nature until they could begin

¹¹² D. Lange, "Nature Study in the Public Schools," *National Educational Association—Journal of Proceedings and Addresses* (1900): 404-11, 404.

science instruction in the latter grades. Katherine Camp, an author and teacher at the University of Chicago Laboratory School, used the principles of psychology to argue that children were capable of various aspects of elementary science in different periods in their development, including four to six-year-olds.¹¹³ She subscribed to a program of elementary science for each phase and detailed what children could logically be expected to do, culminating in solving abstract problems by the ages of 12 or 13 years.

In his report for the *National Society for the Scientific Study of Education Yearbook*, Wilbur Jackman argued that there was no fundamental difference between the method, purpose, or material of nature study and that of natural science.¹¹⁴ Yet, he lamented, it was the denial of this link by scientists that would "discredit the subject in the eyes of the teachers and pupils in the public at large."¹¹⁵ Interestingly, Jackman was imploring scientists to claim nature study as their own, when the previous year the attempts had been made in a rather halfhearted effort.¹¹⁶ Like Camp, he believed that psychology could inform the development of a nature study

¹¹³ Katherine Camp, "Elementary Science Teaching in the Laboratory School," *The Elementary School Teacher* 4, no. 1 (1903): 1-8.

¹¹⁴ Wilbur S. Jackman, *Nature-Study*, National Society for the Scientific Study of Education. Yearbook; 3rd, Pt. 2 (Chicago: University of Chicago Press, 1904).

¹¹⁵ *Ibid.*, 11.

¹¹⁶ Most of the scientists who answered Beal's inquiry did not do any further work on nature study thus losing sight of their claim of the subject. The notable exceptions were John M. Coulter and David Starr Jordan.

program.¹¹⁷ He accepted the premise that G. Stanley Hall had popularized, that children shared much in common psychologically with the savage. He was optimistic that these primitive traits could be overcome through proper nature-study instruction.

The region of nature is for the child, as for the savage and the ignorant man, a domain of mystery and of fancy. The aim of the teacher should be so to present nature and its various manifestations that the reasonableness of things shall appear. The pupil must be trained to see things, as nearly as he can, as they actually exist, and not as though he were intoxicated or insane or in a delirium.¹¹⁸

In answer to those critics who believed that nature-study devoid of fancy would not interest the child, he went on:

There is no reason to fear that this will rob anyone of his enjoyment of nature, or that it will reduce it at one stroke to the level of the prosaic. Truth in science is always more splendid than fiction, and the picture developed by the imagination out of real conditions always eclipses those that are conjured up by flights of fancy.¹¹⁹

Jackman was not wholly opposed to imagination *if* it was based in reality and not completely in the world of make-believe.

For educators, nature study's association with fancy and imagination harmed the reputation of the profession. Many of them had attached their careers to nature-

¹¹⁷ It should be noted that during the year that Jackman published this report he had resigned his job as the Dean of the College of Education at the University of Chicago to become the Principal of the University Elementary School and to serve as editor of *The Elementary School Teacher*. The similarities between his and Camp's philosophy can be attributed to the institutional affiliation.

¹¹⁸ Jackman, *Nature-Study*, 10.

¹¹⁹ *Ibid.*, 11.

study and they had to demonstrate that it was a reputable pursuit and not just a fad. An association with science and an endorsement by scientists would go a long way toward legitimization.

Some scientists did claim an association with nature-study and actively worked to make it a reputable part of the curriculum. Liberty Hyde Bailey was one such scientist. But Bailey also believed strongly that nature-study should be child-centered. He criticized those who believed that the direction for nature-study should come from the scientists in the universities. He recognized that this had been historically the case, but the results were ineffective because much of the curriculum was “unadapted to the child.”¹²⁰ He believed that “[i]t seems a pity that it were ever necessary that the ladder of learning be ‘let down’” from above to the level of the child, instead “it should be stood on the ground” in order for children to more easily reach it and ascend it.¹²¹ This is not to say that Bailey believed that university scientists should not be involved in nature-study; this would certainly be ironic considering his involvement in the foundation of nature-study. Instead, Bailey believed that the child should be empowered to explore the natural world with minimal guidance, and not be led through nature by a higher scientific or educational authority. Children should instead focus on those objects in nature that interested them. He was very clear that nature-study was a “revolt from the too exclusive

¹²⁰ L. H. Bailey, "The Nature-Study Movement," *National Educational Association—Journal of Proceedings and Addresses* (1903): 109-116, 110.

¹²¹ *Ibid.*

science-teacher point of view for the young.”¹²² Bailey was committed to the values of his profession but when it came to nature-study he sought to disassociate scientific language and methods from it.

Despite the fact that most scientists recognized that a university science course was not an appropriate model for a nature-study curriculum because it was too rigid and logical, they were nevertheless ambivalent about straying too far from facts. Bailey himself would argue that the teachers did not need to be rigid in their language, but he also cautioned against oversentimentalism. John M. Coulter, one of the scientists who responded to Beal’s question in *Science*, writing this time for an educational audience, expressed his fear that the nature-study books on the market were misleading students with their fanciful presentations and flowery language.

If the plain facts of science are to be the occasion for flights of fancy, there is nothing left to enable the pupil later to distinguish between what is sane and what is wild. I fancy a large amount of what we call the gullibility of men and women who have passed through the schools arises from the fact that they have never been compelled to distinguish absolutely between fact and fancy. Nature study in elementary instruction is exactly adapted to do this service, and hence should not be compelled to aid in the further development of an unanchored imagination.¹²³

Based on these concerns scientists began to realize that in order to direct nature-study in a productive way, they must have more control over the explication of nature-study philosophy and the education of teachers. Scientists would have to walk the

¹²² Ibid.

¹²³ John M. Coulter, "Botany in Elementary Schools," *The Elementary School Teacher* 3, no. 7 (1903): 409-15, 412.

fine line between recognizing that although nature-study was not science and it should still be kept from entering too far into the realm of imagination and fancy. Following this period of debate about the definition of nature-study, scientists defined nature-study by forming a journal, *The Nature-Study Review*, and a society, the American Nature Study Society, dedicated to nature-study. The journal and organization allowed proponents of nature-study to control the direction of the subject.

Nature-Study Defined

In the opening years of the twentieth-century, proponents of nature-study became more self-conscious and organized. In 1905, the premiere edition of a new journal dedicated to the discussion of all aspects of nature-study in the elementary schools, *The Nature-Study Review*, appeared. The Editorial Board of this new publication was made up of scientists who were interested in educational issues and educators who were responsible for training teachers, all of whom had a stake in defining how to study nature: Liberty Hyde Bailey, Dean of the Agricultural College at Cornell University; Harold W. Fairbanks, a geographer and geologist; Clifton F. Hodge, Professor of Biology at Clark University; John F. Woodhull, a Professor of Science at the Teachers College at Columbia University; and Maurice A. Bigelow, a Professor in the Department of Biology at the Teachers College at Columbia University, who served as the Managing Editor. The publication of the journal with so many respected scientists associated with it provided nature-study with a sense of

legitimacy. It indicated that nature-study was not a fad, as previously feared, but a subject that could take its proper place in the curriculum.

The editorial board signaled the inclusive nature of the journal. According to Bigelow, the members were selected because of their diverse backgrounds within the sciences, which would provide diverse input.¹²⁴ Collectively, they represented the major fields of nature-study: biology, geography, physics, chemistry, agriculture, and education. The newly professionalized discipline of nature-study sought to accommodate as many perspectives regarding the study of nature as possible. Nature-study was no longer solely associated with the biological sciences, but also included the physical sciences as well. The journal also allowed for a wide interpretation and definition of nature-study.

The founders were so deeply concerned with the debates over the definition of nature-study and its connection to science that they struggled to address this issue from the onset. The opening pages of the first volume were dedicated to a discussion of "Nature-Study and Its Relation to Natural Science".¹²⁵ At the first meeting of the society, the question regarding nature-study and its relation to science was again posed, and university scientists and a handful of educators responded to the

¹²⁴ Maurice A. Bigelow, "Introduction," *The Nature-Study Review* 1, no. 1 (January 1905): 1-2.

¹²⁵ The account of the symposium is in the first issue of the journal: H. W. Fairbanks, C. F. Hodge, T.H. Macbride, F. L. Stevens, and M.A. Bigelow, "Nature Study and Its Relation to Natural Science," *Nature Study Review* 1, no. 1 (January 1905): 2-18.

inquiry.¹²⁶ In this first attempt to officially define nature-study they came to some common conclusions: the goal of nature-study was to teach children to love nature (but this sentiment should be reined in appropriately) and that nature-study was related to science. Again, these professionals had to walk the fine line between nature-study and science. By choosing to use the term “nature-study” in the name of the journal instead of “elementary science” they chose to separate themselves from science at least nominally; but in order to garner respect from the scientific and educational community they had to profess some affiliation with science.

The issue of nature-study’s definition was not settled with the foundation of a journal dedicated to it. The subject was revisited at the first meeting of the new professional society, the *American Nature-Study Society*, in 1908 and reprinted in the journal.¹²⁷ The fact that there still were varied definitions floating around, even amongst important affiliates of the journal and society, concerned the Managing Editor of the *Nature-Study Review*, Maurice Bigelow. He took precautions to end any speculation that nature-study was not organized and unified by affirming the unity of

¹²⁶ The educators who responded were primarily on the faculty at Teachers Colleges or Normal Schools, both of which had as their purpose the training of elementary teachers in the various aspects of their jobs; none of the respondents were elementary school teachers.

¹²⁷ The two parts of the report on the symposium at the 1908 meeting of the American Nature Study Society are: Maurice A. Bigelow, F. L. Clements, W. E. Praeger, John G. Coulter, J. W. Shepherd, F.L. Charles, S. B. McCready, and I.B. Meyers, "The Relation of Science and Nature-Study," *The Nature-Study Review* 4, no. 2 (February 1908): 33-51, and Stanley Coulter, C. F. Hodges, and C.R. Mann, "The Relation of Nature-Study and Science Teaching," *The Nature-Study Review* 4, no. 1 (January 1908): 10-24.

philosophy in all of the papers presented at the symposium and in the journal. He stated in the Report of the Secretary that the topic selected to open the 1908 meeting, “Should Nature-Study be differentiated from Science Teaching?” was selected in order to address the concerns of scientists that nature-study was not a distinct field separate from science teaching and thus did not justify its own journal and professional society¹²⁸. Bigelow concluded that the discussion was productive:

The result of the discussion was satisfactory, for near the close of the meeting there was evidently agreement that, however much those entering the discussion disagreed on minor points, nature-study adapted to young children differs from the science of higher schools sufficiently to warrant the name “nature-study,” at least as a matter of great convenience in handling the educational problems of the most elementary studies of nature.¹²⁹

Bigelow was committed to the field and sought to end any speculation that nature-study lacked credibility.

The participants sought to create continuity between science and nature-study. Before he became famous for his theory of ecological succession, Frederic Clements

¹²⁸ At that meeting Bigelow was elected the Secretary/Treasurer of the new society. Liberty Hyde Bailey was elected the President, even in his absence, and five Vice-Presidents were elected, including Clifton Hodge, F.L. Stevens, Vernon L. Kellogg, W. Lockhead, and F. Charles.

¹²⁹ Maurice A. Bigelow, "Report of the Secretary," *The Nature-Study Review* 4, no. 1 (1908): 1-2, 1. Bigelow wore many hats at the 1908 meeting—Secretary of the ANSS, participant in the symposium, and Editor of the NSR. In his capacity as the latter, he issued an Editor’s Note before the published symposium, summarizing the points of agreement amongst the members of the panel, just in case anyone missed his Secretary’s Report.

challenged the assumption that nature-study and elementary science were two different things, stating:

The method of independent observation at first hand is as vital to the one as to the other. The material to be used is the same, and to give the best results in either case it must be used in some definite sequence. In both nature-study and science, there is one best method and others less good. There is the best material, that which touched the student closely and every day on all sides, and the poorest, in which the points of contact are artificial or infrequent. In neither should the material be merely an incident. The single difference between the two is merely one of degree, or better, one of time. Nature-study is science for the child, science is nature-study for the 'grown-up.' They are the two parts of a life-long search for truth; they make up the continuous task of 'problem-solving,' in which the problems must be graded according to the age of the student.¹³⁰

William Praeger, Professor of Biology at Kalamazoo College, agreed with Clements that nature-study and science were ends of a continuum, not distinctly different subjects. Praeger held that

Nature-study *is* science and is simply the name applied to such parts of natural science as can appropriately be taught in the grades. The method of presentation of these facts will differ widely from that in use in the high school or college, but it is science teaching nevertheless.

There should be no break in the continuity of science teaching from the kindergarten to the college, no more than there should be in the teaching of literature or mathematics. The idea that nature-study is not science leads to serious results, the responsibility for accuracy seems to disappear, and much of the nonsense and weak sentimentalism that has brought discredit on the subject is due to this fundamental error.¹³¹

¹³⁰ Bigelow, "The Relation of Science and Nature-Study," 41. The *Nature-study Review* cited the author as F. L. Clements, however, I believe they mean Frederick E. Clements because there is no evidence of a person with the former initials at the University of Minnesota and I can positively place Frederic E. Clements there in 1908.

¹³¹ *Ibid.*, 43. Emphasis is in the original.

In the Editorial Review of the discussion in volume 4, Bigelow asserted that, despite the different language, everyone essentially was in agreement about the character of nature-study.

Obviously there is in all essential agreement with the line drawn between nature-study and science in paper No. IV. [Maurice Bigelow] It is true that papers No. V [Frederick Clements] and VI [William Praeger] state that 'nature-study is science for children'; but we notice that No. V [Clements] says 'Problems must be graded according to age of student' and No. VI speaks of 'natural science which can be appropriately taught to children.'" In other words, both these authors (and all the others) admit that we must distinguish between elementary science and advanced studies of natural things, which is obviously in harmony with those who urge a distinction between nature-study and science.¹³²

Bigelow acknowledged that there may be differences in semantics but that the overall philosophies of the members of the society were in agreement. He goes on to restate the continuity between the two in a manner that would make any nature-study practitioner proud:

You may call such proper elementary work 'science for children,' if you prefer; but for brevity and definiteness most experts in elementary education will prefer the term 'nature-study.' To say that 'nature-study is science for children' is logically parallel with the statement that 'a puppy is a dog not grown up and, therefore, there is no difference between a dog and a puppy.' But there is sufficient difference to make it useful to distinguish between dogs and puppies by using the two words. Likewise, while good nature-study should in the grammar school begin to develop into science, its characteristics are distinct enough to warrant the term 'nature-study' for elementary study of nature independent of the characteristic generalizations and technicalities of science. Think of nature-study as a young, an immature, a 'puppy' stage of science teaching, if you wish; but for the sake of great convenience and

¹³² Ibid., 49.

definiteness let us agree that 'nature-study' means that elementary stage. We need the word 'nature-study' in scientific education just as we need the word 'puppy' in connection with the canine genus. There is not reason why we may not attach, in truth the best usage already has attached, a very definite meaning to the word 'nature-study,' just as to the word 'puppy.' And in that distinction between nature-study and science we need to mention only one thing, namely, leave out of nature-study for elementary schools the characteristic organized generalizations and technicalities of science; but in the early high-school years let nature-study grow into science as gradually and as surely as the puppy grows into the dog. We must agree that nature-study and science are not two things; but simply two stages in the same continuous process of scientific education which for convenience we call nature-study in the elementary phase and science in the advanced phase.¹³³

Since the organizers were ultimately in agreement that nature-study and science were on opposite ends of a continuum of growth, and not in direct opposition, the future of the program was able to accommodate differences in semantics and ultimately not alienate any audience.

Bigelow's solution provided a happy medium for educators and scientists. He answered those who feared that by using the term "nature-study," teachers and students would be tempted to be unscientific in their method or stray too far from the facts and become overly sentimental, by pointing out that "[o]nly one or two articles in *The Nature-Study Review* in three years have definitely pointed away from the approved methods of modern science teaching, and the replies from readers showed clearly that nature-study as a general movement could not go far towards becoming decidedly unscientific in method."¹³⁴ Finally, nature-study had been able to

¹³³ Ibid., 49-50.

¹³⁴ Bigelow, "The Relation of Science and Nature-Study," 50.

accommodate the myriad of definitions, professions, and viewpoints. Instead of erecting boundaries between nature-study and science education, these scientists created a continuum. The same is true of the two professions involved; at first educators and scientists seemed at opposite ends of the spectrum, representing different professional values, but instead of creating additional boundaries between the professions, the American Nature-Study Society created a continuum.

The one issue that the Society was clear on was that there was little call for fancy and imagination in nature-study. The organizers were willing to admit that nature-study should be designed to elicit sympathy with nature from its students, but that there was a line that should not be crossed. Sentimentalism and fanciful nature-study had been a hindrance to the legitimization of the subject. Stanley Coulter, then serving as the Dean of the School of Science at Purdue, summed up the frustration in the development of the discipline:

To those of us who have dealt with nature-study from a practical, rather than from an academic viewpoint, it has seemed a long journey through the stage of definition-mongering and material-peddling to the present conception of its significance and recognition of its pedagogic value. It is very doubtful, indeed, if any modern educational movement has been so hampered by definition, so obstructed by material, so deflected by sentimentalism.¹³⁵

With the advent of the professional society and journal, and the control of these primarily by professionals with a background in science, fancy and emotion were relegated to the hinterland, outside of the legitimate values of nature-study.

¹³⁵ Coulter, "The Relation of Nature-Study and Science Teaching," 10.

The debate over the significance of fancy and emotion in the understanding of nature played out in other arenas as well. Nature-writers grappled with the same issues. And again, the community was divided along similar lines. Some writers advocated a place for fancy and emotion in nature stories (likely the same ones of whom the critics of nature-study were weary), while others argued that nature literature must represent nature in its truest possible manner. This debate will be discussed in the next chapter.

Fancy and Imagination in Literature

Fancy and Imagination in Literature

The child and childhood was at the forefront of the American mind in the late nineteenth and early twentieth-centuries. Evidence of this could be found, according to John Dennis in 1890, in the fact that children occupied a central place in contemporary literature and that this literature had brightened the lives of the readers.¹³⁶ He cited many examples of literature that centered on children, including works by Henry Vaughan, William Wordsworth, Henry Longfellow, John Greenleaf Whittier, and Lord Alfred Tennyson to name just a few. He wrote “There is, I believe, no poet of mark writing within the last forty years who has left the child out of his song”.¹³⁷ In Dennis’ view, children appealed to the poets because they offered optimism about the future of humanity to those disillusioned by the intensity of the modern world. Further, the poets shared the essential traits of “imagination, fancy, and love” with children and this common ground allowed poets to laud what they considered important.¹³⁸

Historian Gail S. Murray has argued that as children’s labor was no longer necessary to ensure the economic solvency of their families, childhood was

¹³⁶ John Dennis, "Children and the Poets," *Littell's Living Age* 184 (January 1890): 235-240.

¹³⁷ *Ibid.*, 237.

¹³⁸ *Ibid.*

romanticized.¹³⁹ Romantic children “became valued for their social and emotional contribution to the family” instead of their financial and labor contribution.¹⁴⁰ No longer toiling in the workplace, children spent more time in school, or pursuing educational pursuits like reading, because education was essential to their moral instruction.

As children gained more leisure time they started reading on their own, instead of solely listening to the books that their parents read to them. As a consequence, authors began to consider children a unique audience, and wrote books specifically aimed at them. Due to this phenomenon, people in towns across the United States, beginning with the larger, better-organized metropolitan areas, realized the need for a specific section for children in their public libraries. In the 1890s, librarians began to cater to children. As a result, libraries were remodeled or constructed with a diminutive audience in mind, including a décor that children would find appealing and a shelving system that was not only easily reached, but also easily understood. Parents were encouraged to build a library for their children at home as well. Since middle class children were the primary consumers of children’s literature, their homes usually contained a small library in the nursery, filled with a quality selection of books on a variety of different subjects.¹⁴¹ Writing in the popular magazine, *The*

¹³⁹ Gail Schmunk Murray, *American Children's Literature and the Construction of Childhood*, Twayne's History of American Childhood Series (New York: Twayne Publishers, 1998).

¹⁴⁰ *Ibid.*, 82.

¹⁴¹ *Ibid.*

Dial, Walter Taylor Field exclaimed, "Let every child have his little book-case in the nursery, --or better yet, a shelf in the library which he may call his own. Let him be encouraged to read good books and to care for them. He will then come to feel the friendship with them which is the greatest joy of the literary life."¹⁴² It was a valuable lesson for a child to develop a deep and lasting relationship with a particular book or a favorite author; children carried their fond memories of this relationship into adulthood. Beyond the pleasure associated with enjoying a good book, contemporaries argued that libraries allowed children to develop more fully. According to Bissell, this was especially important for the children of immigrants. When given access to a library, possibly at home, but more likely a public or school library because of the expense involved in creating a personal library, immigrant children were granted the opportunity to grow beyond the educational level of their parents and were introduced to places beyond the life they were currently leading.¹⁴³

In her analysis of the emergent period of the professionalization of public librarianship in *Apostles of Culture*, Dee Garrison argues that public libraries emerged because the genteel elite sought to morally uplift the masses.¹⁴⁴ When the American Library Association was founded in 1876, the genteel elite (as opposed to the newly

¹⁴² Walter Taylor Field, "The Problem of Children's Books," *The Dial* 27 (August 1, 1899): 68-69.

¹⁴³ Fannie S. Bissell, "What the Libraries Are Doing for the Children," *The Outlook* 70 (January-April 1902): 424.

¹⁴⁴ Dee Garrison, *Apostles of Culture: The Public Librarian and American Society, 1876-1920*, Print Culture History in Modern America (Madison: University of Wisconsin Press, 2003).

emergent socioeconomic elite) were living in a world in which their influence was dwindling. As the modernizing industrial world was changing so were social conditions, especially for the lower classes. The genteel elite viewed public libraries as a way to make their values and ideals available to the lower classes in an effort to reform them.¹⁴⁵ Librarians made themselves available to guide the literary tastes of the public, again in order to guide readers toward honorable lives.

As the virtues of reading were extolled and libraries erected, the market was flooded with children's books. One consequence of literature marketed directly to children was that they were selecting and reading books on their own from the increasing supply of books written specifically for them. Parents no longer took the guiding role in selecting their children's reading material.¹⁴⁶ The result of this shift was that parents could no longer control what their children were exposed to. This lack of parental control caused some anxiety about whether children would make wise choices in their reading selections, which provided an opening for library professionals to guide parents in building their children's libraries and supervising their book selections. There was a real concern about the influence that children's literature, and the quantity that they read, had on their moral development.

Within the professional community there was dissent regarding how much guidance children should receive in their reading habits. Tudor Jenks, the author of

¹⁴⁵ Garrison acknowledges that there is some debate about how effective libraries were as a method of moral reform of the masses because the lower classes had more rigid work schedules and very little time for leisure. The majority of the patrons were members of the genteel elite.

¹⁴⁶ Murray, *American Children's Literature and the Construction of Childhood*.

some turn of the century children's books, instructed parents and guardians to guide children into literature until their tastes were fully formed in order to ensure their proper development.¹⁴⁷ Isabel Lawrence, a teacher at the St. Cloud Normal School in Minnesota, argued at the National Education Association meeting in 1899 that children must focus on their interests when it came to selecting books, rather than be prescribed from a narrow canon because the point was to cultivate an interest for literature.¹⁴⁸ Nora Archibald Smith, co-author of several books with her sister, Kate Douglass Wiggins of *Rebecca of Sunnybrook Farm* fame, and notable children's author in her own right, maintained that in order to guide the child's literary taste the following was the best method:

First, give the child a mother who will sing sweet baby-songs and repeat charming bits of verse to him as he lies in her arms by the nursery fire, for the beginnings of literary taste are made here; second, send him by and by to a really intelligent, cultivated kindergartner who will feed him on the marrow of tradition—on fable and myth, fairy and folk story, on wonder-tales of science, too, and on tales of gods and heroes. See to it, also, that in kindergarten and

¹⁴⁷ Mary Mapes Dodge, Kate Douglas Wiggins, Howard Everett Hale, Horace E. Scudder, Frank R. Stockton, T.W. Higginson, Tudor Jenks, Agnes Repplier, Caroline M. Hewins, and Nora A. Smith, "The Best Books for Children," *The Outlook* 69, no. 1 (September 7, 1901): 869-884.

¹⁴⁸ Isabel Lawrence, "Children's Interest in Literature," *National Educational Association—Journal of Proceedings and Addresses* (1899): 1044-1051. Lawrence noted that there are a number of ways to find out what children prefer reading, but many of the methods are flawed. One method was simply to issue a questionnaire regarding their reading habits and preferences; however, she found that these usually reflected the preferences of the teacher who collected the questionnaires, and in some cases, even reflected their language use regarding certain books. Another method was to ask adolescents and adults what they preferred to read as children, but this was problematic because memories may fail. One method that gets around the faults of the previous two is simply to watch and record what children spontaneously remove from the shelves at the library.

home no day slips by without the magic touch of poetry upon its shoulder and teach the eager listener some verse worthy to be his perpetual possession... Last of all, open the library doors to the happy child and give him free entrance. Let him begin at the first book on the top shelf and read completely around the room, until, he lays down the last column on the lowest shelf of all. If you have selected your books wisely, nothing in the library will hurt him; if there are weeds here and there, a noxious growth, a reptile, or a slimy rock, he will swim down the pure current of literature as regardless of them all as the fish in the flowing stream.¹⁴⁹

Out of this conflicting information, one person's advice stood out. Caroline Hewins, the children's librarian at the Hartford Public Library in Connecticut, became one of the first and best known children's librarians through her major contributions to children's librarianship. She published two guidebooks to children's literature in order to assist libraries in building a public collection and those parents who were guiding the reading efforts of their children.¹⁵⁰ In *Books for the Young: A Guide for Parents and Children*, Hewins advocated that parents should teach their children respect for books and they should carefully oversee their children's reading

¹⁴⁹ Ibid., 883-884.

¹⁵⁰ A testament to the value of her two most famous guides was the fact that they were reissued a number of times throughout the late nineteenth and early-twentieth centuries; the contents still provided pertinent information to the professional or parent interested in books for children. Caroline M. Hewins, *Books for the Young: A Guide for Parents and Children* (New York: Leypoldt, 1883), and Caroline M. Hewins, *Books for Boys and Girls a Selected List* (Boston: Library Bureau, 1897). Hewins is a perfect example of the burgeoning professional librarian. She used her skills to point children to mentally and morally appropriate material in hopes of uplifting them. Garrison points out that women dominated professional librarianship because it fell within the domain where women could exert their authority. Becoming a children's librarian was even more appropriate because women were responsible for the intellectual and moral development of children. However, Garrison also notes that neither children nor adults would use the library unless there were books available that interested them.

selections by examining the books themselves before they allowed their children to read them.¹⁵¹ She divided children's literature into sixteen broad categories, including: Modern Fairy Tales; Travel and Adventure; Myths, Legends and Traditional Fairy Tales; Poetry, and Selections for Reading and Speaking; and Science. Within each of these sections, she listed the best books for children, and subdivided the categories further. Her lists leaned heavily toward imaginative stories, including such classics as *Alice in Wonderland*, *The Water-Babies*, *Arabian Nights*, Bulfinch's fables, and Hawthorne's *Tanglewood Tales* and *Wonder-book*. Even some of her science selections were more imaginative in nature, including Arabella Buckley's *Fairy-land of Science*, and Olive Thorne Miller's *Little Folks in Feather and Fur*. In her later publication, *Books for Boys and Girls*, Hewins continued to address the literary needs of parents and children, but also addressed the needs of public libraries that had a separate children's collection. In this selection, she expanded the number of categories to forty-five and expanded the number of subsections as well. She indicated her desire to "include stories which broaden the horizon of children, cultivate their imagination and love of nature, and add to their stock of general knowledge".¹⁵²

Hewins suggested that the books a child read were preparation for a full life as an adult, assessing that: "The best books for a child are the books that widen his world. A man or woman in middle life or old age who loves poetry and great pictures

¹⁵¹ Hewins, *Books for the Young*.

¹⁵² Hewins, *Books for Boys and Girls a Selected List*, 5.

and statues, is familiar with Shakespeare, and has historic sense, imagination, a sense of humor, and a love of nature, is full of resources and the joy of living. No one can ever have these resources and that joy who has not had them from earliest childhood.”¹⁵³ Hewins suggested that children’s libraries should possess good poetry, a child-oriented Shakespeare publication with pictures, a book with a collection of art masterpieces and another with historical images, a collection of fairy tales and myths, a nonsensical book like *Alice in Wonderland*, and outdoor guide books such as Neltje Blanchan’s *Bird Neighbors*.¹⁵⁴

Commentators acknowledged that children were discriminating consumers of literature with definite preferences and thus were not attracted to all children’s literature, but rather to very specific types of stories. Kate Morris Cone, a contributor on educational issues in popular magazines and journals, contended that those traits which attracted children to certain stories were “directness and simplicity of style and strength of plot, and, for subject, primarily, something which involves free-masonry with animals.”¹⁵⁵ Children were drawn to animal characters that they could relate to, who possessed good traits and acted positively in the world in which they live. Often, a child would be in such sympathy with an animal character that they acted out the part of that character in their playtime. After humanized animals, the next subject of

¹⁵³ Ibid., 11.

¹⁵⁴ Ibid., 882-883.

¹⁵⁵ Kate Morris Cone, "Children and Literature," *Education* 18 (January 1898): 290-298, 291-292.

interest for children was fairies. Cone also contended that children's minds, as well as their sympathies, were broadened through books on "travel, natural history and ethnical geography."¹⁵⁶ In other words, children were most interested in subjects that stimulated their imaginations.¹⁵⁷

In 1904, *The Outlook* undertook a broad survey of mothers, encompassing all social classes, about what their children were reading. This information was compiled and analyzed by Elizabeth McCracken, a noted author on both children's and women's issues.¹⁵⁸ Based upon this information and her discussions with young children, she concluded that children were particularly fond of fairy stories, stories about animals and stories of adventure. It was children's affinity for human or animal characters that influenced which books children liked. For example, McCracken recalled a conversation with a young girl who really liked the book "*The Birds*" *Christmas Carol* because she "loved 'the kind of person Carol was—so good to other people, and so patient and so pretty'."¹⁵⁹ Emotional connection or sympathy with a character guided children's tastes. In a survey of books suggested by children's librarians and authors for children, a number of books appeared repeatedly. Among the oft-cited books recommended were *Alice in Wonderland*, *Robinson Crusoe*,

¹⁵⁶ Kate Morris Cone, "Children and Literature," *Education* 18 (February 1898): 365-369, 368.

¹⁵⁷ Bissell, "What the Libraries Are Doing for the Children," and Elizabeth McCracken, "What Children Like to Read," *The Outlook* 78 (3 December 1904): 827-832.

¹⁵⁸ McCracken, "What Children Like to Read," 828.

¹⁵⁹ *Ibid.*

Water-Babies, Hawthorne's *Wonder Book* and *Tanglewood Tales*, Hans Christian Andersen, *Aesop's Fables*, *Arabian Nights*, *Mother Goose*, *Pilgrim's Progress*, *The Brownies*, Oliver Herford's *Child's Primer*, and Peter Newell's *Rhymes and Pictures*.¹⁶⁰ These works met the qualifications which professionals deemed necessary to give children a quality reading experience. These favored children's books were well written, with words and phrases that were attractive in a singsong manner, believable, yet captured the imagination, had characters that children could relate to, and scenes that children could relive through play.

It was widely held, by both professionals and lay people, that imagination was stronger in children than in adults. Again, this idea hearkened back to the theory that children were like primitive beings. One bit of evidence for the imaginative life of children was their tendency to construct imaginary companions. Clara Vostrovsky of Leland Stanford Jr. University reported on this phenomenon in 1895, from her study of accounts of imaginary companions from children who were engaged in a relationship with one and adults who had had such a relationship in their childhood.¹⁶¹ She noted that these accounts were difficult to come by because children were secretive about their companions and adults were embarrassed because of the prevailing negative attitudes about these fancies. Through her examinations she discovered that girls more often than boys had imaginary companions, positing that

¹⁶⁰ Dodge, "The Best Books for Children," and Anna Hamlin Wikel, "The Child and His Book," *Education* 20 (May 1900): 544-547.

¹⁶¹ Clara Vostrovsky, "A Study of Imaginary Companions," *Education* 15 (March, 1895): 393-398.

this was because young girls were less active. These companions appeared mostly to children of nervous temperament who were lonely. Further, she found that the companions were most often children of the same sex, but occasionally were animals, and that the companions lived in the child's house or nearby. Most often the companions were typical children who served as playmates while in some cases they were unusually wealthy or poor, kind, beautiful or helpful. Vostrovsky argued that these imaginary companions were important to the lives of these children because they allowed them to acquire material possessions and traits that they would never possess in real life and they provided much needed companionship and sympathy. She concluded that such imaginary relationships should not be discouraged by older children or adults as it fueled the young child's imagination; yet, she cautioned that the imagination should be balanced with reality in order to prevent the child from becoming too lost in their imaginary world, a dangerous predicament for a developing mind.

As children grew older, they tended to rein in their imaginative faculties more. According to educator Isabel Lawrence, the period up to eight years of age is the "age of faith," meaning children believe the fairy tales and myths that they enjoy; however, around the age of eight or nine children enter what Lawrence called the "age of doubt", which lasted until early adolescence.¹⁶² When the child entered this latter period, they became more critical of the fanciful stories they had accepted as a child. They might still enjoy the stories of their youth, but they were able to respond to them

¹⁶² Lawrence, "Children's Interest in Literature," 1048.

in a more discriminating manner. The theory of psychological correlation between childhood and primitive society provided an explanation and a justification for the fanciful nature of the young child. As children grew older and became more skeptical, they recapitulated the advances that humans had made by moving closer into the “rational” age. But the fanciful stage in childhood was an essential phase on a child’s developmental pathway.

Children, in their early years, enjoyed stories that suited their flights of fancy and allowed them to stretch their imaginations. One classic genre that met these requirements was the fairy tale. Cone noted that although American children were interested in fairy stories, they did not have the hold on them that they did in European countries because these stories were not local for American children.¹⁶³ Nevertheless, children did find fairy tales to be a “pretty and convenient idea, --a valuable goddess-out-of-a-machine for helping to explain, temporarily, Greek gods and scientific agencies.”¹⁶⁴ As related by Cone, the most popular fairy stories according to children were *Water Babies* and *Alice in Wonderland*. However, some fairy tales were toned down for an American audience because, in Cone’s words, “American children are said to be more timid and tender-hearted than English children.”¹⁶⁵ As a result, stories that involved ghosts, goblins, witches or even mild violence and scary scenes must be modified for an American reading audience. In

¹⁶³ Cone, "Children and Literature," 293.

¹⁶⁴ Ibid.

¹⁶⁵ Ibid., 295.

addition, she held that American children could not tolerate any stories involving cruelty to animals or humans because children could sympathize with both groups.¹⁶⁶

Walter Taylor Field, an author of many books for children and a critic with views about what children should be reading, took his job seriously, because he believed that stories had a direct impact on the children who read them. If a child “is fed upon tales of ogres and giants who eat up little boys, a taste is formed which will continue to demand extravagant and blood-curdling fiction. Jack the Giant Killer is the logical antecedent of Jack the Indian Killer and Jack the Ripper.”¹⁶⁷

Despite the modifications needed to make these traditional tales properly adapted for an American audience, the majority of the specialists in children’s literature nonetheless recommended fairy tales. Following the Civil War, America witnessed a shift from an overwhelming objection to imaginative stories to a proliferation of fanciful stories written just for children. Interestingly, Mabel Osgood Wright’s father, Samuel, lamented the state of literature for children in the *Atlantic Monthly* in 1865 when his daughter was six years old; he argued that contemporary literature reflected the American tendency to push children to be older than their actual ages and the result was a literature that was inappropriate for the nursery.¹⁶⁸ Educators and parents maintained that imaginative stories and fairy tales were not

¹⁶⁶ Ibid., 296.

¹⁶⁷ Walter Taylor Field, "The Problem of Children's Books," *The Dial* 27 (1 August 1899): 69.

¹⁶⁸ Samuel Osgood, "Books for Our Children," *Atlantic Monthly*, December 1865, 724-735.

detrimental to children, and instead served two fundamental purposes: to entertain and to elicit feelings.¹⁶⁹ Children finally had a literature all their own, to correspond with their unique stage in life, and adults held out hope that the future could be salvaged in the hands of a properly trained child.

According to Nora Archibald Smith, a child who lacks imagination “can have no charity, no sympathy, no creative ability, no ideality, no reverence, and no true love.”¹⁷⁰ However, she contended that a lack of interest in myths and fairy tales did not mean that a child was devoid of imagination, for this talent could express itself in other ways. For example, a child could use their imagination to understand the working of the natural world or science, instead of reciting or acting out fairy tales. One should not worry about a child whose imagination did not express itself in the typical manner of fairy tales and myths, and instead recognize in which direction their childish wonder lay, and cultivate the imagination in that way.

Hewins summarized her philosophy regarding the reading life of the child through a collection of quotes by notable authors, in her section entitled *A Symposium on Books for Children*. Two notable figures that she drew upon for developing the philosophy represented in her work were George J. Goschen and Samuel Osgood.

Goschen, a British political leader and businessman, seemed an unlikely candidate for

¹⁶⁹ For valuable analyses about the role of literature in the “construction” of childhood see Gillian Avery, *Behold the Child: American Children and Their Books, 1621-1922* (Baltimore, MD: Johns Hopkins University Press, 1994), MacLeod, *A Moral Tale*, and Murray, *American Children's Literature and the Construction of Childhood*.

¹⁷⁰ Nora Archibald Smith, "Training the Imagination," *Outlook* 64 (1900): 459-461.

guidance on children's educational issues, but it was a significant interest of his.

Hewins approvingly quoted a portion of his book *The Cultivation of the Imagination*:

What I want for the young are books and stories which do not simply deal with our daily life. I prefer *Alice in wonderland*, as a book for children, to those little stories of 'Tommies' and 'Freddies,' who read the books. I like Grimm's *Fairy tales* better than these little nursery novelties. I like the fancy even of little children to have some larger food than images of their own little lives; and I confess I am sorry for the children whose imaginations are not sometimes stimulated by beautiful fairy tales, or by other tales which carry them to different worlds from those in which their future will be passed....¹⁷¹

Imaginative stories, according to Goschen, would transport the child into a world yet unknown to them and would prevent boredom with reading. Samuel Osgood, a Unitarian minister and author, examined the contribution that books had made to the uplift of the child's spirit.¹⁷² According to Osgood nature had dictated that a child's "first education shall be in the senses and muscles, the affections and fancy, rather than in the critical judgment, logical understanding, or analytical reason".¹⁷³ It is also important to note that Osgood demanded truth in books for children, because this is what children want; but children sought truth told in an interesting manner.

¹⁷¹ George Joachim Goschen, *The Cultivation of the Imagination: An Address* (London: Effingham Wilson Royal Exchange, 1878); quoted in Hewins, *Books for the Young: A Guide for Parents and Children*, 24.

¹⁷² Osgood, "Books for Our Children."

¹⁷³ *Ibid.*, 725.

Robert M. Gay spent much of his career thinking about fact and fancy in literature as evidenced by his editorial work in *Fact, Fancy and Opinion* in 1923.¹⁷⁴ In an article in 1911, Gay discussed his worry that children were growing up too quickly in the modern world and had forgotten how to play, and, even worse, were “losing the faculty of ‘make believe.’”¹⁷⁵ The culprit, according to Gay, was the early twentieth century culture’s preference for rationalism. His concern was not so much that this rationalistic approach toward the world had influenced adults -- although he did lament adults had “grown up” -- but that this attitude had seeped down into the lives of children.

The rationalist gets far more consideration than he deserves, the romanticist far less. From his childhood the latter finds the world persistently bent upon robbing him of his dreams. The fairies go first, the giants, ogres, witches, and ghosts, in their train. Santa follows. Swans prove geese. Women do not all prove angels. Miracles are explained. Revelation becomes evolution.¹⁷⁶

In Gray’s view, the imaginative life of children had become subservient to the rational tenor of the times. The adult, who was charged with the care of youth, had failed the young, not only by growing up and creating this overly rational world, but also through simple actions such as:

devising various so-called ‘conveniences of modern life,’ as killing to the romance of childhood ‘as the canker to the rose, or taint-worm to the weanling herds that graze, or frost to flowers.’ Among these are numbered the apartment-

¹⁷⁴ Robert M. Gay, ed., *Fact, Fancy and Opinion; Examples of Present Day Writing* (Boston: The Atlantic Monthly Press, 1923).

¹⁷⁵ Robert M. Gay, "Making Believe," *Atlantic Monthly*, 11 August 1911, 252-257, 252.

¹⁷⁶ *Ibid.*, 255.

house and the nurse-maid. I protest against the apartment-house because there the materials of make-believe are well-nigh wanting. The dumb-waiter and the fire-escape have possibilities, and the janitor might serve at a pinch for an ogre; but these are poor substitutes for attics and cellars and gardens. I abominate nurse-maids and governesses and resident tutors, because these are usually unromantic persons. There is a tincture of bravado in any make-believe carried on in the presence of an unsympathetic and pedagogically-minded guardian, be he nurse-maid, tutor, governess, or teacher. The bubbles of romance are easily punctured; the sprouts of fancy languish in a chilling atmosphere. From this arraignment, however, I must except the old-fashioned Irish servant-girl, or maid-of-all-work, if she is still in existence. The Swedes and Poles and Finns are said to have supplanted her. When they came in, and when children began to grow rationalistic, she departed, singing, like Matthew Arnold's cuckoo, 'The bloom is gone, and with the bloom go I!'¹⁷⁷

Gay placed some of the blame for the assault on fancy on education and the educators, who were devoid of imagination and did not encourage it in their students. Likewise, Anna Wikel pointed the finger at educators as well. Wikel chided some "well meaning but unimaginative teachers" who discouraged their students from reading fairy stories and folk tales because they were not factual; the teachers believed that factual information would better serve their students in the future and that it was therefore the most appropriate choice in the classroom.¹⁷⁸ Wikel argued, however, that children could only learn so many facts; therefore, literature for the purpose of imparting facts was useless. Instead, literature should be used for character-building. Children should be allowed to read fairy and folk tales because they appeal to them and they are morally strong. She argued that it is natural for children to read these types of stories because a "child's reading should follow the

¹⁷⁷ Ibid., 256. The latter sentiment regarding the contribution of the Irish nursemaid to the imaginative life of children is from Gay's experience as a young boy with his nursemaid, Mary Flannagan, who had a profound impact on him as a child.

¹⁷⁸ Wikel, "The Child and His Book," 544.

order of the development of the faculties of his mind” because it is “Nature’s guide for his best mental and moral development.”¹⁷⁹

In a two-part article in *Education*, Ella Guptill argued that myth had an important place in modern education because the current educational curriculum had become overly practical; the result was that children were increasingly skeptical when confronted with a traditional fairy tale or myth.¹⁸⁰ Guptill contended that not all of the blame could be placed upon the education system, but the real guilty party was what she called “the spirit of the times.”¹⁸¹ She characterized the late nineteenth century as the ultimate “age so free from the taint of superstition and so eager in its search for truth.”¹⁸² But Guptill was specific about what type of stories children should be introduced to: first, reacting to the trend of educators to use Greek mythology to stimulate the sentiment in elementary children, she argued that there was enough nineteenth century literature that would fulfill this goal; second, that sentimental literature should not be overly sensational because it had deleterious effects on children, as a narcotic might have on the body; and, finally, that the imaginative literature that teachers used to stimulate the imagination of children should be based on truths, rather than pure fantasy. With all of these caveats taken

¹⁷⁹ Ibid., 545.

¹⁸⁰ Ella L. Guptill, "The Place of the Myth in Modern Education," *Education* 14 (1894): 461-466, and Ella L. Guptill, "The Place of the Myth in Modern Education: Concluded," *Education* 14 (1894): 546-552.

¹⁸¹ Guptill, "The Place of the Myth in Modern Education," 464.

¹⁸² Ibid.

into consideration, literature could and should be used to stimulate the imagination of the child according to Guptill, the desired result being:

The imagination which can soar from the fragrance of a rose to the song of angels, carrying with it all the varying emotions of heart and soul, this is the imagination wanted in our public schools; this is the imagination which will be secured by the true education; and this is the imagination which shall withstand the corruption and dross of the world, and in the end hold up pictures which shall make the world itself purer. To this end does the true culture of imagination tend.¹⁸³

Louisa Lane McCrady expanded on Guptill's argument that the imaginative life of children was decreasing in modern life and she blamed it on the products of modernization.

The age of fact comes early to many children in these days when scientific discovery and the accumulation of fortunes make luxuries common even in simple homes. The conditions of modern life do not leave children long in a state of imaginative simplicity.¹⁸⁴

Despite the benefits that people reaped due to modernization, it did have its pitfalls. Educators and authors alike were concerned that it depleted the imaginative life of the child.

McCrady articulated the root of the critic's concern: without the proper development of their imaginative lives children would not develop the ability to sympathize with other human beings; alternatively, the successful development of this ability would allow children to develop a sense of respect and understanding for their fellow beings. Along with a sympathetic attitude, the most powerful outcome of

¹⁸³ Guptill, "The Place of the Myth in Modern Education: Concluded," 552.

¹⁸⁴ Louisa Lane McCrady, "The Child and the Imaginative Life," *Atlantic Monthly*, October 1907, 480-488, 481.

the proper growth of the imaginative life was the development of reverence, according to McCrady. She held that deep respect was a trait that had been lost to a modern American child who had “little occasion to feel reverence; he is left too little alone; he loves to constantly be among things and so little among thoughts; his day is too full of facts”.¹⁸⁵ The attention of most children, at their parent’s insistence, was given to other pursuits thought to properly prepare them for adulthood; therefore, they spent very little time inside their own heads, exploring the terrain of their imaginations.

Educators’ fears about the diminishing imaginations of youth overlapped with the debate highlighted in the previous chapter because some educators were concerned that there was too much emphasis on science, which emphasized rationality. Robert St. John, a high school teacher from Duluth, Minnesota, lamented that people lacked “spiritual insight” into the beauties in the world.¹⁸⁶ Although people were capable of finding beauty in the world, they did not realize the higher spiritual source of that beauty. Children, however, were different; they approached the world with wonder, despite little understanding of the underlying physical principles. Because of this, St. John argued, children were the “hope of the race.”¹⁸⁷ However, as children grew older, they lost this sense of awe and focused more on the

¹⁸⁵ Ibid., 485.

¹⁸⁶ Robert P. St. John, "Spiritual Education," *Education* 17, no. 8 (April 1897): 449-457.

¹⁸⁷ Ibid., 449.

material world. In part, this transition was natural as a child aged, but it became accelerated by a child's education. St. John believed that education had dulled the child's imagination because it focused too much on the intellect. Instead, he argued that a well-rounded education would develop the head, but also the hand and most importantly, the heart. Manual education would be geared toward training the hands to be useful in the world, but how did one train the heart? First, he argued that one must not laugh at the imaginative foray of the child's mind, for to do so would "silence a little of the soul's harmony."¹⁸⁸ He also believed that there was too much emphasis on science and mathematics in the schools and not enough on the humanities, especially literature. Literature had the most effect in elementary school because this was the period when the child's heart and imagination were open to influence. An education in literature at a very young age would not only benefit the developing child, but the wider world as well, as the children took these developed sensitivities with them as they moved out to take their place in society.

Despite the overwhelming support for a central role for imagination and fancy in the development of the child amongst educators and authors, this idea had its detractors. Amid the rise of literature aimed at children, there was a growing fear that these books, magazines, and poems did not provide valuable moral guidance for children. In the religious publication, *Catholic World*, a concerned citizen, Margaret H. Lawless, issued her concern that these stories and poems served the sole purpose

¹⁸⁸ Ibid., 451.

of mere entertainment.¹⁸⁹ Lawless' fear was that entertainment would become the standard and children would not fulfill their duties at home and that parents would use these books to shirk their parental duties as well. She lamented:

Oh! But they must be *amused*. Yes, for that is the curse of modern days, that men and women, being partially freed from the pains and penalties of necessity that demand unceasing labor, have drifted from the anchorage of past beliefs and hopes, must all be amused; and to gain time and freedom from the responsibility and restraint of the constant presence of their children, they must in turn provide amusement for them, and the earliest form it will take will, of course, be the "picture-book"; and before the virgin mind is gradually unfolded in panorama a world of adventure and characters, as different from that which he will be called upon to live as in day from night, dreaming, in profoundest slumber from waking toil for bread! Just how "stale,--flat, and unprofitable" their every-day tasks and amusements come to be by reason of these well-seasoned narratives indiscriminately devoured, some mothers, at least, are learning to know and tremble for the results. I have heard a fragile, weary-looking mother request a son at least three times to perform some trifling office to save her tired feet; beyond an impatient movement and inarticulate murmur, no notice was taken of her request, until at last she arose and, laying down the cross infant which she had been trying to soothe, she performed the duty herself. In her absence I looked over the boy's shoulder—he was old enough to have been reading history or the lives of the heroes of Christianity who unlocked the treasures of unknown worlds of spiritual and temporal richness—and found the object of his fascination was some wonder-book from the public library!¹⁹⁰

Lawless further criticized fairy tales because they were unrealistic, and as a result, they could be harmful to children because they drew them away from everyday life.

There were consequences for allowing:

sons and daughters to feed from childhood upon this diluted pap until the strong meats of duty, morality, and religion are unpalatable and indigestible.

¹⁸⁹ Margaret H. Lawless, "What Are Our Children Reading?" *Catholic World* 50 (March 1890): 733-739.

¹⁹⁰ *Ibid.*, 735.

And, when one reflects further upon this subject, what possible reason can there be why children should read so much? Why inflame their imagination or draw out too soon intellectual processes which should be more slow in their development than the growth of the body? It is heart and conscience which should be cultivated; and what chance do they stand in the flood of children's books let loose upon the public every year? What thought has the publisher taken in the matter, except that the author is popular and that the book will sell? What thought has the author taken? Surely no thought of the souls that will be caught in this sweeping flood, for he, or she, does not, perhaps, believe in a soul or a Maker of souls!¹⁹¹

Lawless feared that contemporary literature would pull children away from the influence of religion and stunt their moral training.

In an address before the National Education Association, Percival Chubb, the Director of English at the Ethical Culture School in New York City, dismissed the idea that myths and fairy stories should not be taught to children because they were essentially pagan in nature; he cited the numerous rituals and celebrations that Americans participated in as evidence that the anti-pagan argument was absurd. If people discarded myths and fairy tales because they were pagan, they would also have to stop celebrating traditional holidays, like Christmas and Easter, which had a pagan foundation.¹⁹²

Similar to the debate detailed in the previous chapter over the place of fancy and imagination in nature-study, this issue extended into realms of childhood education, including debates over what children should read recreationally. The

¹⁹¹ Ibid., 736.

¹⁹² Percival Chubb, "The Value and Place of Fairy Stories in the Education of Children," *National Educational Association—Journal of Proceedings and Addresses* 44 (1905): 871-879.

players were somewhat different, but the sides were essentially the same: one side believed that fancy and imagination had a place in nature-study and children's literature as a counterbalance to the effects of modernity; on the other side, these were those who felt it had no place because it was contrary to the modern values of rationality and truthfulness. Once again, the debate hinged on which set of values would benefit children and enable them to be successful when they came of age in the changing world. The literature debate was not so tightly drawn along disciplinary boundaries as were the debates over defining nature study and the results were overwhelmingly on the side of fancy and imagination. Literature did not claim an allegiance with truth, like science did, and there wasn't as much to lose if the world wasn't represented exactly as it was presented—there was license to play with the truth because it made for good reading. However, when the debate over these seemingly opposed values entered the nexus between literature and nature-study, it became more complex and the values of fancy and imagination were marginalized.

Nature Stories

James Secord argues that children's books can serve as “indicators of the changing social, religious, and moral values carried by scientific knowledge in different circumstances” and therefore provide a valuable, and understudied, source for historians of science who have historically worked under the assumption that

children's stories about nature fall outside the boundaries of science proper.¹⁹³ The debate over the extent to which nature should be presented factually and in accordance with the truth or whether there was some latitude for a more subjective, anthropomorphized representation of nature indicated a larger discussion over the extent of sciences' authority in all arenas of the study of nature.

The Editor and founder of *The Craftsman*, Gustav Stickley, lamented in his column *Als Ik Kan*, that too much of the focus of organized nature-study in the classroom had been on books and images, not on actual nature itself. Stickley asked:

But how many of us are really *studying Nature*, living with her, close to her great kind heart, with confidence in her wisdom as a teacher and respect for her laws? We have yet to learn that nature-study and studying nature are two totally different occupations. One is accomplished with walls on four sides and a roof overhead and the other out under the sky, with the companionship of fresh winds and sweet smells. Nature-study is like making friends by way of books or letters, studying nature is winning friendship by way of smiles and handclasps and kind voices.¹⁹⁴

Stickley went on to state that books are valuable records of what others have experienced, but they are no substitute for spending time in nature oneself. Stickley's criticism was shared by the overwhelming majority of those interested in nature-study: books should not serve as substitutes for actual interaction with nature, but books could serve as a guide to the study of nature or as a substitute for a walk in the woods for those who lived far away. To serve the aforementioned purposes, nature-

¹⁹³ James A. Secord, "Newton in the Nursery: Tom Telescope and the Philosophy of Tops and Balls, 1761-1838," *History of Science* 23 (1985): 127-151, 128.

¹⁹⁴ Gustav Stickley, "Nature's Citizens," *The Craftsman*, July 1913, 454-455, 454.

writers flooded the market with informational non-fiction books and nature fiction.¹⁹⁵ Thus, if students were confined to the city or the indoors, they could encounter nature vicariously through the words of the nature writers.

Sarah Arnold, a contemporary educator, argued that nature-study and literature complemented each other, and that nature provided an excellent subject for literature.¹⁹⁶ Peter Schmitt notes that “[a]dults have always taught their ways to children in story form”; however, early twentieth century authors did not seek to teach “their ways” because they feared it would steal their youthful character and pull them further from the natural world.¹⁹⁷ It was these ways that had led to the modern, industrialized, fast-paced world and that had forced the average child to grow beyond their years. Instead, nature writers sought to shield children from this over-stimulation and teach them to slow down in order to fully appreciate what was left of

¹⁹⁵ This dilemma over the place for books in nature study is debated in the following articles: Francis W. Halsey, "The Rise of the Nature Writers," *American Monthly Review of Reviews* 19 (1902): 567-571, and Edward L. Thorndike, "Reading as a Means of Nature-Study," *Education* 19 (1899): 368-371. The library of nature handbooks and nature fiction books is too long to be included here. I would refer the reader to Maurice A. Bigelow, "Best Books for Nature-Study," *The Nature-Study Review* 2, no. 5 (1906): 168-177. Bigelow's article contains suggestions sent in by readers about which nature-study texts are the best and an analysis of the selected texts by the author.

¹⁹⁶ Sarah L. Arnold, "Nature Study and Literature," *National Educational Association—Journal of Proceedings and Addresses* 34 (1895): 570-572.

¹⁹⁷ Schmitt, *Back to Nature*, 115.

the natural world. The characters in children's books often went into nature in order to regain their childhood natures through their connection to the world of nature.¹⁹⁸

According to John Burroughs, literary naturalists treated nature differently than did scientists even though the object of their craft was the same.¹⁹⁹ Burroughs claimed that "nature study is only science out of school, happy in the field and woods, loving the flower and the animal which it observes, and finding in them something for the sentiments and the emotion as well as for the understanding."²⁰⁰ However, the difference was in the way in which these facts were interpreted by each group and in their final goals. The literary naturalist sought to expand the reader's sympathy toward the natural world, and the scientist to relate verifiable facts.

The most famous nineteenth and early twentieth-century literary naturalists, Henry David Thoreau, John Muir, Ralph Waldo Emerson, and John Burroughs, were ambivalent not only about the discoveries of science, but also about the processes of accumulating scientific knowledge. Thoreau and Muir both claimed to produce scientific knowledge, for example, Thoreau on seed dispersal and succession and Muir on glacier movement.²⁰¹ However, despite the fact that both produced scientific

¹⁹⁸ Ibid.

¹⁹⁹ John Burroughs, "The Literary Treatment of Nature," *Atlantic Monthly*, July 1904, 38-43.

²⁰⁰ Ibid., 42.

²⁰¹ On these points see Stephen R. Fox, *John Muir and His Legacy: The American Conservation Movement* (Boston: Little Brown, 1981), and Laura Dassow Walls, *Seeing New Worlds: Henry David Thoreau and Nineteenth-Century Natural Science, Science and Literature*; (Madison, WI: University of Wisconsin Press, 1995).

knowledge, both believed that science was perhaps not the best method of understanding and characterizing nature. Objectivity and rationality were the hallmarks of the professionalizing sciences, and both Thoreau and Muir made use of knowledge produced through this method, but they held that science was an incomplete lens through which to view nature. Both argued that science, because it valued objectivity and rationality, separated the observer from the observed; this separation forced scientists to see knowledge as absolute and not relational, and this viewpoint, according to Thoreau and Muir, allowed only a small subset of legitimate knowledge to be valued. Further, rationality demanded that emotions be sidelined so that reason could guide knowledge acquisition, but this emphasis devalued spiritual and mystical knowledge about the universe and relegated it to the realm of questionable knowledge. Emerson sought a science that understood that humans and the natural world were intricately connected both physically and mentally.²⁰² Sympathy provided a way to understand nature that modern science did not because of the distance the latter placed between the subject and observer. Through sympathy, the observer could “‘speak nature’ and read her hieroglyphic language.”²⁰³ Finally, Burroughs, who was adamant that he was neither a scientist nor claiming to be securing scientific knowledge, argued that science was cold and overly-rational

²⁰² Roy R. Male, "Sympathy: A Key Word in American Romanticism," in *Romanticism and the American Renaissance: Essays on Ethos and Perception in the Age of Emerson, Thoreau, Hawthorne, Melville, Whitman and Poe*, ed. Kenneth Walter Cameron (Hartford: Transcendental Books, 1977), 19-25.

²⁰³ *Ibid.*, 23.

and that the methods of science, particularly natural history, left its subjects limp and lifeless.²⁰⁴ Science simply did not tug at the heartstrings of the readers in the way that nature stories could.

Orra Underhill has noted that nature-study literature from 1890 to 1920 emphasized those qualities that were characteristic of the Romantic period including:

Sentimentalism, high development of imaginative sensibility, exaltation of feeling as fundamental and supreme, faith in intuition and impulse as more fundamental guides to action than reason, glorification of nature, joy in emotion, color, movement, assurance of something nobler and truer than the present, nature worship, mysticism, emphasis on myth, legend and chivalry, and deepest needs of man not satisfied by knowledge.²⁰⁵

Indeed, those who advocated interpreting nature by way of fancy and imagination emphasized many of these characteristics and represented a revival of the Romantic viewpoint—with the purpose of solving the modern problem of the estrangement between humans and the natural world. Many late nineteenth and early twentieth century Romantics believed science did little to build bridges between humans and nature because not only was the language that was used too dry and over-intellectualized, but the explanations fell short of aiding one in fully comprehending, much less sympathizing with, nature. Cultivating a love of nature was high on the list of priorities for these educators because this was essential to uplifting rural life and conserving the natural world. They further believed that a love of nature was

²⁰⁴ Edward Renehan, *John Burroughs: An American Naturalist* (Post Mills, Vt.: Chelsea Green Pub. Co., 1992).

²⁰⁵ Underhill, *The Origins and Development of Elementary-School Science*, 156.

essential for a happy life in the modern world, and that emotionalized nature-study was a foundation for the moral development of the child.²⁰⁶ Nature-study was valued as more than “formal information” but as “a process of life-growth” where the full development of the human was more important than their mere intellectual development.²⁰⁷

Some children’s authors and educators were supportive of fanciful and imaginative tales about nature because they were appealing to the child and met their psychological needs. For example, author Kate Morris Cone believed that:

Imagination and science have also gone hand in hand in these small minds. The facts of nature—the flowers, the animals, the miracle of the seasons, the marvel of reproduction, the movements of sun, moon and stars, and the thoughts of God as Maker and Disposer—have greatly enlarged the field of their imaginations; and their very fertile imaginations have personified and made stories out of every fact of nature from Mr. Wind to the little family in each flower.²⁰⁸

According to Cone, this continuity between science and literature was fostered best in kindergarten. Katherine Dolbear, a high school teacher in Holyoke, Massachusetts, argued for the use of fancy in nature-study in the elementary grades in the form of myth:

²⁰⁶ This argument is made for primary literature as well as secondary. David Starr Jordan, "Nature Study and Moral Culture," in *National Educational Association—Journal of Proceedings and Addresses* (1896): 130-139, David Starr Jordan, "Nature Study and Moral Culture," *Science* 4, no. 84 (7 August 1896), and Tolley, *The Science Education of American Girls*.

²⁰⁷ Underhill, *The Origins and Development of Elementary-School Science*.

²⁰⁸ Cone, "Children and Literature," 368.

Myth should be used in connection with the nature work, not in extreme, nor to give the child the wrong impression of life, but to allow his imagination to develop naturally and normally. Plants and animals are endowed with the same qualities as human beings by the child. Shall we tell him that plants cannot feel, and that his pets cannot reason; or shall we let him think of them in his childish way, which will gradually change to a wholesome understanding of the comparative sensibilities of all life? To rush him by the age of myth and past the childish view of life is to dwarf his soul. He is not yet ready for fine discrimination and classification.²⁰⁹

In other words, the young child is not ready for the world of science. Anna Wikel maintained that children were like fertile fields that could only be planted with wisdom after the field has been prepared with years of childhood fancy; thus, fanciful amusements were necessary for the proper development of the child.²¹⁰ Wikel was not opposed to giving children factual material as long as it was done creatively and for these cases where the facts were more relevant and more important than stimulating their imaginations. She wrote:

What could be more beautiful, more like a fairy tale than the lives of flowers and birds, or butterflies, or accounts of exciting adventures in strange lands? But I do deplore the narrow spirit which leads adults to think that facts—dry, hard facts—should be the only or the principal mental pabulum of childhood, forgetting that there is plenty of knowledge in the world, but little of the creative faculty—imagination. The most tiresome people with whom we come in contact are people with facts but no fancy. They are heavier than lead.²¹¹

²⁰⁹ Dolbear, "Nature Study for the Graded Schools," 603.

²¹⁰ Wikel, "The Child and His Book," 544-547, 545.

²¹¹ *Ibid.*, 546.

It was possible to teach facts, but in a way that also utilized the imaginative and fanciful faculties of the child. In his preface to *Mother Nature's Children*, Allen Walton Gould declared that:

This book aims to help the young to see the spirit rather than the form of nature. It traces the love and care and mutual dependence of living things from human beings down to plants. And while it is set in an imaginative framework, no facts are stated and no illustrations used save on good scientific authority.²¹²

The purpose of his book was to teach the child the facts of nature, but

as every fact is a fairy tale in the mind of the child, these facts will “take form and limb” in a way that would make them untrue for us. They may seem childish to us, but we must remember that all conceptions are necessarily childish when really imaged by children. That is the only way the truth can be held by the child.²¹³

For Gould, children were the offspring of Mother Nature, as are the other objects of nature. Children would learn best about their kin through a sympathetic bond with them, not through dull, dry facts.

Despite the open plea for more imagination in nature stories, there were those who cautioned against the overuse of imagination. A well-documented debate about the place of fancy in interpreting the natural world took place in popular magazines. The nature faker discussion was a dispute that began when John Burroughs wrote a piece in 1903 for the *Atlantic Monthly* entitled “Real and Sham Natural History,” accusing a number of nature-writers of misrepresenting nature; among those criticized

²¹² Allen Walton Gould, *Mother Nature's Children* (Boston: Ginn & Company, 1900), v.

²¹³ *Ibid.*, vi.

were Charles G. D. Roberts, Ernest Thompson Seton, and William J. Long.²¹⁴ The books criticized by Burroughs included: *School of the Woods* by William J. Long, *The Kindred of the Wild* by Charles Roberts, and *Wild Animals I Have Known* by Ernest Thompson Seton.²¹⁵ The basic criticisms of all of the books were the same: the authors were imbuing animals with human characteristics beyond what basic biological science accepted and passing their misrepresentations off as fact. For example, Burroughs questioned the veracity of Seton's account of the rabbit, Raggylug, who consciously led the dog that was chasing it into a thorny patch in order to punish the pursuer. It was not the actions that Burroughs questioned, but the claim that it was a conscious decision on behalf of the rabbit. The harshest criticisms were reserved for Long; over half of Burroughs' article was filled with evaluation of his work. The focus of Burroughs' condemnations was a book entitled *School of the*

²¹⁴ John Burroughs, "Real and Sham Natural History," *Atlantic Monthly*, March 1903, 289-309. For a more extensive discussion of the Nature Faker debate see Ralph H. Lutts, *The Nature Fakers: Wildlife, Science & Sentiment* (Golden, Colo.: Fulcrum, 1990). For a discussion of Burroughs' involvement in the debate and his philosophy of natural history see the biography by Renehan, *John Burroughs: An American Naturalist*. For a more contemporary account see Clara Barrus, *The Life and Letters of John Burroughs* (Boston: Houghton Mifflin Company, 1925). Barrus noted that even before his article appeared in *Atlantic Monthly* that Burroughs had regrets about his forceful stance; after rereading Darwin and a German book entitled *Animal Play* he felt he may have overlooked some possible truth in the work of those he accused. The term "nature faker" was applied by President Theodore Roosevelt to those who, like Long, were accused of stretching the truth. Edward B. Clark, "Roosevelt and the Nature Fakirs," *Everybody's Magazine*, June 1907, 770-774.

²¹⁵ William Joseph Long, *School of the Woods: Some Life Studies of Animal Instincts and Animal Training* (Boston: Ginn and Company, 1902), Charles George Douglas Roberts, *The Kindred of the Wild: a Book of Animal Life* (Boston: L. C. Page & Co., 1902), and Ernest Thompson Seton, *Wild Animals I Have Known: And 200 Drawings* (New York: Charles Scribner's Sons, 1898).

Woods; this book presupposed that animals consciously met in a classroom situation to teach one another the skills needed for life in the woods, including vocalization, acquiring food, nest and shelter building, and defense against predators. Burroughs concluded that “Mr. Long’s book reads like that of a man who has really never been to the woods, but who sits in his study and cooks up these yarns from things he has read in *Forest and Stream*, or in other sporting journals. Of real observation there is hardly a vestige in his book; of deliberate trifling with natural history there is no end.”²¹⁶ It is true that Burroughs advocated a relationship between humans and animals at an emotional level because animals share their “emotional nature” with human beings.²¹⁷ As he explained:

It is as plain as anything can be that the animals share our emotional nature in vastly greater measure than they do our intellectual or our moral nature; and because they do this, because they show fear, love, joy, anger, sympathy, jealousy, because they suffer and are glad, because they form friendships and local attachments and have the home and paternal instincts in short, because their lives run parallel to our own in so many particulars, we come, if we are not careful, to ascribe to them the whole of human psychology.²¹⁸

But he maintained that comparable expressions of emotion were the extent of the similarities between the human and animal world. Unlike humans, animals do not have language or make conscious attempts to educate their young; instead their lives consist of “instinct, imitation (thought, doubtless, this is instinctive), and

²¹⁶ Burroughs, "Real and Sham Natural History," 306.

²¹⁷ John Burroughs, "Current Misconceptions in Natural History," *The Century Magazine*, February 1904, 509-517, 510.

²¹⁸ *Ibid.*, 510.

experience”.²¹⁹ Burroughs’ critique hinged on his belief that nature must be treated in a factual manner. One did not have to be a scientist to look for the truth in nature, for naturalists sought truth as well--one simply had to be committed to an accurate portrayal of the natural world if they were going to make their knowledge public.

Long responded to Burroughs’ criticism in an article entitled “The Modern School of Nature-Study and its Critics”.²²⁰ Long believed that there was a distinct separation between the role of the scientist and that of the nature writer, stating that:

First, the study of Nature is a vastly different thing from the study of Science; they are no more alike than Psychology and History. Above and beyond the world of facts and law, with which alone Science concerns itself, is an immense and almost unknown world of suggestion and freedom and inspiration, in which the individual, whether animal or man, must struggle against fact and law to develop or keep his own individuality. It is a world of *appreciation*...rather than a world of *description*. It is a world that must be interpreted rather than catalogued, for you cannot catalogue or classify the individuality for which all things are struggling. Here the “flower in the crannied wall” is analyzed, indeed, but not according to the principles of Gray’s Manual; “the eagle that stirreth up her nest, fluttereth over her young, and beareth them on her wings,” sweeps into our hearts without the might of a Latin name added; and the “poor, cowerin’, timorous beastie” runs away and leaves us with a question that cannot be answered by telling us whether this mother mouse belongs to the long-tailed or jumping variety. This upper world of appreciation and suggestion, of individuality interpreted by individuality, is the world of Nature, the Nature of the poets and prophets and thinkers.

²¹⁹ Ibid., 511. Burroughs claimed that animals do not consciously or unconsciously teach their young, as some of these authors claimed, but that instead they may act “in a manner which arouses imitation.” In the same article, Burroughs shared an excerpt from a letter that he received from President Theodore Roosevelt in which Roosevelt argued that he believed that animals may unconsciously teach their offspring.

²²⁰ William J. Long, "The Modern School of Nature-Study and Its Critics," *The North American Review*, May 1903, 688-698.

Though less exact, it is not less but rather more true and real than Science, as emotions are more real than facts, and love is more true than Economics—²²¹

Burroughs and Long both agreed that science and nature study as recounted in stories were two totally different pursuits, but where they disagreed was on how the events witnessed in nature should be presented. Burroughs held that it was important not to deviate from the facts of nature, but to present them in a way that allowed the reader to sympathize with nature. Long, on the other hand, held that nature should be interpreted in the way of the poet; the focus should not be on the generalities or the traits that species have in common, but on the beauty beheld in the individual.

The nature faker debate served as a cautionary tale for nature-writers to avoid an over-fanciful representation of nature and led to a more stringent standard of accuracy in the popular press. In a review of Charles Roberts' book *The Watchers of the Trails*, George Gladden commented that although Roberts' stories were entertaining and helped people appreciate wildlife, they did more harm than good because they spread misinformation, which was hard for serious naturalists to dispel.²²² And Alja Robinson Crook, a geologist and Curator of the Illinois State Museum of Natural History, believed strongly that popular magazines should employ

²²¹ Ibid., 688.

²²² George Gladden, "Natural History--or Imagination?" *Current Literature* 37 (1904): 161-164.

“not only careful literary, but scientific editing as well” when reporting information about the natural world to its audience.²²³

Elizabeth Donaldson argued that the “nature faker controversy should be read as part of a larger discussion concerned with the distinction between science and literature, reason and emotion, masculinity and femininity.”²²⁴ Donaldson is right in her analysis, but I would also go one step further to argue that the nature faker movement was part of a larger debate about nature-study and whether this educational approach was to be shaped by educators, scientists, or nature-writers. It was a discussion over pedagogy, in particular, who had the best method of preparing children for a productive and valuable life in the modern world. Further, it was a debate over which intended outcome of nature-study held the most value—a sympathetic love for nature and a desire to honor and respect it or a quality scientific education—for the future of the planet. It would be easy to argue that this debate was a product of growing territoriality over professional boundaries, but it would not be completely true. While many nature writers and educators took the side of emotion and fancy, some did not. The same is true of scientists: many advocated a rational, scientific education for youth, but others did not. Many fell somewhere in between a continuum with emotion and fancy at one end and science at the other.

²²³ A. R. Crook, "Misrepresentations of Nature in Popular Magazines," *Science* 23, no. 593 (May 1906): 748.

²²⁴ Elizabeth J. Donaldson, “Picturesque Scenes, Sentimental Creatures: The Rhetoric and Politics of American Nature Writing, 1890-1920” (Ph.D., State University at Stony Brook, 1997).

As a nature writer, Mabel Osgood Wright had a stake in the nature faker debate. While she is seldom credited as such, she was an important voice of moderation in the debate. In an article published two years after the controversy began, Wright made the argument that nature should be considered “a field for fiction” in the *New York Times Review of Books*.²²⁵ Wright was firmly considered to be presenting nature in an accurate manner in her books by her readers and critics, but it is also true that she believed that nature writers should be granted some license in their presentation in order to make nature palatable for children. For example, she would make her bird characters speak in order to describe, as accurately as possible, migration habits. Nature, for Wright, did not always have to be portrayed as is, but instead should be allowed a fictional spin in order to encourage children to relate to it. One of the most effective means of getting children to relate to nature was to anthropomorphize the elements of the natural world.

Because children were equated with primitive beings it was held that they used themselves as a reference point for all life and vivified and anthropomorphized nature. There was evidence that some children did this.²²⁶ For example, if an item moved spontaneously, a child might assume that it was alive, because moving is something they do, and they are alive. In addition, organisms were endowed with

²²⁵ Mabel Osgood Wright, "Nature as a Field for Fiction: Some New Books on Natural History and Outdoor Life Dealing with Fact and Fancy," *The New York Times Book Review*, 9 December 1905, 872.

²²⁶ For documentation of this behavior see James Sully, *Studies of Childhood* (New York: D. Appleton and Company, 1908).

emotions and behaviors that resemble the child's own and reacted to the world in the way that a child would.²²⁷

Isabel Lawrence, an educator at the State Normal School in St. Cloud, Minnesota, argued that young children before the age of eight were not constrained by the laws of nature because they did not know them; therefore, it was natural and instinctive for children to test the boundaries of natural law. She wrote:

How delightful, then, to be the giant in the story, to knock stars out of the sky with your head, to walk with seven-league boots and actually seize the pot of gold at the end of the rainbow! The child suffers from instinctive fears, and every fear means a possible interest in the literature which can both exercise and allay it. The little mortal who trembles at the sight of a big dog, glows with a sense of conquest when your story enables him to slay lions and tigers with Hercules, and face with sublime courage fearful dragons and fire-spouting chimeras. Thus myth and fairy tale satisfy the child as they have satisfied primitive man.²²⁸

Myths and fairy tales allowed the child to act beyond the laws of nature—to speak with animals and plants and fly to the moon. This instinct in children was also believed to be the hallmark of primitive humans who thought that plants and animals had souls and could act of their own free will. Since the ontogeny of the race mimics phylogeny, this myth-accepting stage was essential for the full development of the human child. Lawrence warned:

²²⁷ Gail Melson, a Professor of Developmental Studies, argues that children relate to animals more than to adult humans and use animals “to explore, clarify and reflect different facets of the child's sense of self.” This may help explain why children feel so comfortable assuming that animals react to the world in the same way that they would. Gail F. Melson, *Why the Wild Things Are: Animals in the Lives of Children* (Cambridge, MA: Harvard University Press, 2001), 6.

²²⁸ Lawrence, "Children's Interest in Literature," 1044-1051, 1046.

Starve the instinct now, and man is forever doomed to live within narrow ranges. Its present food is fancy. If the child does not enter the realm of literature thru the time-honored gateway of fancy, there is danger that he may never find any other entrance. Later the door is shut, and he who climbs in by some other way must miss forever the beauty reflected from the orient.²²⁹ Fanciful literature was the way to allow children to cultivate their imagination; if they did not read fanciful stories as children, they might then never develop the imagination needed to translate the words on a page to images or learn to love literature.

Children preferred animals stories where the animals were made to resemble human beings and could talk and act like humans. Elizabeth McCracken claimed that children preferred animals stories that were “almost too good to *be* true” because they were infused with high adventure.²³⁰ She noted that “Mr. Kipling’s animals linger in their minds longer than do those of Mr. John Burroughs”.²³¹ Similarly, Lawrence noted that children shared a kinship with animals based on camaraderie.

The animistic tendency which makes the little child attribute his own feelings to things around him interests him especially in growing things—flowers and animals. The boy and the dog mutually understand each other. They roll over in the dirt with exactly the same impulse. No grown-up need expect to enter the charmed circle. The child is nearer to the animal, he proves his kinship by his interests. From this educators have concluded that the child cares how many legs the wasp has, and longs for precise knowledge of the construction of the cat’s eye or the dog’s feet. This proves an entire mistake. These are analytical, grown-up interests, and have long made dull and stupid school hours for our children. The instinctive interest in animals is social. It is one of companionship. Those books only which write sympathetically of the animal’s soul-life—the *Jungle Book*, *Wild Animals I have Known*, *Black*

²²⁹ Ibid., 1046-1047.

²³⁰ McCracken, "What Children Like to Read," 830. Emphasis in the original.

²³¹ Ibid.

Beauty, Beautiful Joe, or Water Babies—really appeal to children. Great is the disdain for the improving nature reader.²³²

When G. Stanley Hall interviewed children he found out that half were prone to anthropomorphize natural objects like the sun, moon, and stars and to believe that their daily motions are conscious and about one-third believed that plants felt pain when picked.²³³ Children preferred imaginative stories, and if all that mattered were children's preferences, the matter would end there. But there was a danger in writing these kinds of stories, at least in the minds of those who believed nature should be portrayed true to the letter.

Any deviation from scientific reality could make an author susceptible to charges of nature faking. The most offensive crime, and the one that most nature fakers were guilty of, was anthropomorphization or the attribution of human traits to animals by using similar language to describe the physiological, behavioral, and cognitive functions of both. Harriet Ritvo has traced the construction and purpose of animal stories throughout the eighteenth and nineteenth centuries and has elucidated an instructive trend—while animal stories became more scientifically sophisticated as the centuries progressed, providing factual information regarding the organism, authors of both the eighteenth and nineteenth centuries told animal stories in order to help children relate to animals and, in turn, to treat them with kindness and respect.²³⁴

²³² Lawrence, "Children's Interest in Literature," 1047-1048.

²³³ Hall, "The Contents of Children's Minds."

²³⁴ Harriet Ritvo, "Learning from Animals: Natural History for Children in the Eighteenth and Nineteenth Centuries," *Children's Literature* 13 (1985): 72-93.

Ritvo notes that eighteenth century animal stories placed animals well below humans on the great chain of being in order to demonstrate that humans were superior; the result was that animals were represented as creatures very different than humans. However, after the publication of Darwin's *On The Origin of Species* in 1859, the kindred nature of humans and animals was more fully recognized, and even though more factual information was included, animals and humans were treated similarly. Animals were "humanized and sentimentalized" and as a result were "admitted into Victorian nurseries as teachers."²³⁵ In Darwin's later books, *The Descent of Man* and *The Expression of the Emotions in Man and Animals*, he considered how evolution by natural selection applied to the human realm.²³⁶ In these works Darwin himself anthropomorphized by using a "language of continuity" to demonstrate the close relationship that exists between humans and animals.²³⁷ The behavioral and psychological characteristics of both humans and animals, according to Darwin, evolved through the same mechanism, further reinforcing their connection.²³⁸ If

²³⁵ Ibid., 90.

²³⁶ Charles Darwin, *The Descent of Man, and Selection in Relation to Sex* (London: Murray, 1871), and Charles Darwin, *The Expression of the Emotions in Man and Animals* (New York: D. Appleton and Co., 1873).

²³⁷ Eileen Crist, *Images of Animals: Anthropomorphism and Animal Mind*, Animals, Culture, and Society; (Philadelphia: Temple University Press, 1999).

²³⁸ Elizabeth Knoll, "Dogs, Darwinism and English Sensibilities," in *Anthropomorphism, Anecdotes, and Animals*, eds. Robert W. Mitchell, Nicholas S. Thompson, and H. Lyn Miles (Albany: State University of New York Press, 1997), 12-21.

anthropomorphization came naturally to humans, when describing animal actions -- because it allowed them to use a language that they were familiar with -- it came even more naturally to children, it was believed.

In understanding this point, Eileen Crist provides a valuable framework and language for discussing anthropomorphism. She argues that there are two ways to discuss animals: either as “subjects” or as “objects.” Anthropomorphization treats animals as “subjects” of analysis because it is assumed that they “experience the world as a meaningful place, rather than merely existing in it.”²³⁹ Further, the subject experiences are “authored”, meaning that the “actors have the power to bring about, or refrain from bringing about, events in their world, as a matter of agency and will.”²⁴⁰ Treating animals as subjects whose experiences are authored and meaningful implies subjectivity. This is in direct contrast to the objectivity inherent in treating animals as if they were “objects” that merely experience the world and have no power to act in it; this is the preferred approach of scientists, who seek to distance themselves from anthropomorphization. The one exception to this rule is naturalists, argues Crist, because they put themselves into the experience and observations and view animal life as meaningful and authored. When nature is anthropomorphized, it becomes a subject, with meaning and purpose. As a result, it cannot be objectified in the way typical of how a physical scientist views nature.

Instead, nature is viewed with subjectivity and sympathy. The latter perspective. Of

²³⁹Crist, *Images of Animals*, 5.

²⁴⁰ *Ibid.*, 4.

course, was encouraged by those nature writers who adopted the literary device of that anthropomorphization.

The presumed continuity to be found between humans and the natural world after Darwin's publications had another consequence for human understanding of the natural world. Not only were humans using the vernacular of human action and experience to describe events in the natural world, but humans were now also capable of understanding the natural world by sympathizing with it. Many educators and scientists maintained that the ultimate goal of the nature-study movement was to bring the child into sympathy with the natural world around them and the objects within it. To sympathize with the natural world was to experience fellow feeling, to comprehend the world from the perspective of the natural subject.²⁴¹ The ability to sympathize with objects in the natural world implied a relationship between humans and nature, turning the objects into subjects.

A further perspective on this issue can be found in Lisa Mighetto's work on attitudes towards animals during the Progressive era, which demonstrates how people reacted to the anxiety created by Darwinian science.²⁴² In essence, Darwin's revival of evolutionary theory solidified the relationship between humans and animals; the fear that humans were mere beasts because of their close relationship with the animal world increased. In addition, Darwin's evolutionary mechanism, natural selection,

²⁴¹ Male, "Sympathy," 19-25.

²⁴² Lisa Mighetto, *Wild Animals and American Environmental Ethics* (Tucson: University of Arizona Press, 1991).

implied a world where struggle was the norm and this did not sit well with many during the late nineteenth century who sought a more cooperative world. Nature-writers reacted by anthropomorphizing the animals in their stories to make them more like humans, complete with human emotions, traits, and morals: the idea was to impose human morality onto the animal world in order to argue that morality is natural and has a long history in nature.

About fifteen years after the nature faker debate, Samuel C. Schmucker, author and member of the Department of Biological Sciences at the State Normal School in West Chester, Pennsylvania, lamented that the controversy had produced a lasting effect on the relationship between scientists and teachers of nature-study.²⁴³ Immediately after the debate, scientists distrusted anyone who “studied animals without using the microscope and without chasing them through analytical keys, and tacking the Latin names to them.”²⁴⁴ The poor relations continued into the second decade of the century. The rift could be mended if scientists realized that “Nature study is not the first step to cytology and morphology, or to the systematic study of any group of animals or plants. Nature-study is, on the other hand, a step towards a full and appreciative sense of the meaning of one’s environment in every-day life.”²⁴⁵ Keeping this goal in mind, Schmucker contended that it should perfectly acceptable

²⁴³ S. C. Schmucker, "Science and Nature Study," *The Nature-Study Review* 14 (February 1918): 48-52.

²⁴⁴ *Ibid.*, 48.

²⁴⁵ *Ibid.*, 50.

to personify natural objects and allow them to speak for themselves, as long as they “say the right things.”²⁴⁶ He believed that anthropomorphization did not harm the child intellectually or confuse them into believing that animals talk, as scientists feared, but instead allowed the child to learn about nature in a way that was colorful and relatable.

Some were concerned about the negative impact that anthropomorphization might have on the child. Caroline Gray Soule, a nature-writer and naturalist, held that children were interested in nature “unhumanized” and an accurate portrayal of nature provided a valuable lesson for children. In an article for the journal *Education* she explained: “The child who is taught to see plants and animals as they are, and to observe their ways and lives as they exist, without the addition of manners and morals which the creatures do not and cannot possess, is taken outside of his own little round and learns that other lives and other ways are good.”²⁴⁷ She goes on to blame the tendency to anthropomorphize on the “old severe methods of teaching”; that is, in an effort to distance contemporary education from the old style, teachers softened their approach toward the material and also humanized it.²⁴⁸ This practice, for Soule, was harmful to the child because it misrepresented nature. Botanist John M. Coulter agreed; he decried authors of nature-study books for using “playful and imaginative

²⁴⁶ Ibid., 52.

²⁴⁷ Caroline Gray Soule, "Concerning Nature Study," *Education* 20 (June 1900): 622-631, 627.

²⁴⁸ Ibid., 628.

devices” to “attempt to arouse a factitious interest in nature-study.”²⁴⁹ This tactic was insulting to children and to the material at hand because it sent the wrong message. Coulter claimed that in nature-study there was an opportunity for “exact and independent observation, for cultivating the ideas that between cause and effect there can be no hiatus, that imagination is beautiful and most useful in its place but that its place is never to lead to a misconception of facts, and that there should be no playing fast and loose with truth.”²⁵⁰

Although he was not a trained teacher, Burroughs considered carefully his philosophy of nature pedagogy and he summarized it in the following paragraph from “Nature Lore”:

When people ask me, ‘How shall we teach our children to love nature?’ I reply: ‘Do not try to teach them at all. Just turn them loose in the country and trust to luck.’ It is time enough to answer children’s questions when they are interested enough to ask them. Knowledge without love does not stick; but if love comes first, knowledge is pretty sure to follow.²⁵¹

Summoning up memories of his own childhood, he recalled that this was exactly the way that his appreciation for nature grew:

A feeling of companionship with nature came long prior to any conscious desire for accurate and specific knowledge about her works. I loved the flowers and the wild creatures, as most healthy children do, long before I knew there was such a study as botany or natural history. And when I take a walk now, thoughts of natural history play only a secondary part; I suspect it

²⁴⁹ John M. Coulter, "Principles of Nature Study," *Nature Study Review* 1, no. 2 (March 1905): 57-61, 59.

²⁵⁰ *Ibid.*, 59.

²⁵¹ John Burroughs, "Nature Lore," *The Century Magazine*, June 1918, 187.

is more to bathe the spirit in natural influences than to store the mind with natural facts.²⁵²

Thus if children developed a sympathetic bond with nature in childhood it would carry over into later life and they would, like Burroughs, appreciate what was sacred in nature rather than seeing it as items to be catalogued. The value of time in nature was not “a note-book full of notes of birds and trees and flowers as a heart warmed and refreshed by sympathetic intercourse and contact with these primal forces.”²⁵³

Burroughs called this non-factual recording of the happenings of nature, nature lore.

According to Burroughs, nature lore was

a mixture of love and knowledge, and it comes more by way of the heart than of the head. We absorb it with the air we breathe; it awaits us at the side of the spring when we stoop to drink; it drops upon us from the trees beneath which we fondly linger; it is written large on the rocks and ledges where as boys we prowled about on Sundays, putting our hands in the niches or on the rocky shelves older than Thebes or Karnak, touching carefully the phoebe’s mossy nest, with its pearl-white eggs, or noting the spore of coon or fox, or coming fact to face with the oldest inhabitant of the region, who saw the foundations of the hills laid and the valleys scooped out—Geologic Time, whose tent is the gray, overhanging rocks.²⁵⁴

For Burroughs there was value in simply spending time reading nature’s lore; nature’s value does not derive from the factual observations one could make. In fact, Burroughs noted that “[m]any a walk I take in the fields and woods when I gather no new facts and make no new observations; and yet I feel enriched.”²⁵⁵ Reading

²⁵² Ibid., 187-188.

²⁵³ Ibid., 188.

²⁵⁴ Ibid.

²⁵⁵ Ibid.

nature's lore could ultimately bring value because "the close observation of nature, the training of the eye and mind to read her signals, to penetrate her screens, to disentangle her skeins, to catch her significant facts, add greatly to life in the country."²⁵⁶ Burroughs further argued that learning to love nature could greatly enhance one's observational skills in adulthood: "Love sharpens the eye, the ear, the touch; it quickens the feet, it steadies the hand, it arms against the wet and the cold. What we love to do, that we do well. To know is not all; it is only half. To love is the other half."²⁵⁷ Hence, developing an emotional attachment with nature could help bring the intricacies of nature into sharper focus. This sentiment is in marked contrast to the scientific approach, which posited that emotional detachment was what would ultimately lead to truth. Nevertheless, Burroughs did not see emotionalized inquiry as antithetical to science. The facts of nature did not have to replace love for nature; they could in fact enhance each other. He wrote: "The modern man looks at nature with an eye of sympathy and love where the earlier man looked with an eye of fear and superstition. Hence he sees more closely and accurately; science had made his eye steady and clear."²⁵⁸ In fact, in an article on nature study, Burroughs commented

We approach nature in an exact, calculating, tabulating, mercantile spirit. We seek to make an inventory of her storehouse. Our relations with her take on

²⁵⁶ Ibid.

²⁵⁷ John Burroughs, "The Art of Seeing Things," *The Century Magazine*, December 1899, 188.

²⁵⁸ Ibid., 190.

the air of business, not of love and friendship. The clerk of the fields and woods goes forth with his block of printed tablets upon which, and under various heads, he puts down what he sees, and I suppose foots it all up and gets at the exact sum of his knowledge when he gets back home. He is so intent upon the bare fact that he does not see the spirit or meaning of the whole. He does not see the bird, he sees an ornithological specimen; he does not see the wildflower, he sees a new acquisition to his herbarium; in the bird's nest he sees only another prize for his collection. Of that sympathetic and emotional intercourse with nature which soothes and enriches the soul, he experiences little or none.²⁵⁹

The increased attention to fantastic nature stories is evidence, according to Burroughs, of the increased fascination with animal life.²⁶⁰ People were so ravenous for nature lore that they were accepting of this “yellow” journalism and would accept misinformation as fact.

This thoughtful, and often heated, discussion over how accurately nature should be portrayed and whether fancy had a legitimate place in nature literature was precipitated by the increasing concern over the effects that modern America would have on its youngest citizens. Due to the environmental and demographic changes at the turn of the century, the world was changing rapidly. Nature-study and its resultant literature were an effort to teach students about something that was becoming increasingly foreign as families settled in the cities. The overwhelming hope was that nature-study and nature stories would also cultivate a morality toward the earth. This hope, as expressed by Elizabeth Brown, a method and training teacher at the Normal School in Washington, D.C., was that “[a]s the child enters into closer

²⁵⁹ John Burroughs, "Nature Study," *The Outlook*, 4 February 1899, 326-328, 326.

²⁶⁰ Burroughs, "Current Misconceptions in Natural History."

relations and sympathy with the animate life around him, he is susceptible to moral training, as ignorance yields place to knowledge, fear to love, and cruelty to tenderness.”²⁶¹ With some well cultivated knowledge about the natural world, children might live closer to it.

²⁶¹ Elizabeth V. Brown, "Popular Science in the Public School," *Education* 16 (March 1896): 421-424, 424.

Liberty Hyde Bailey's "Outlook to Nature"

Over the course of his ninety-six years Liberty Hyde Bailey developed a unique outlook on nature that was informed by various events and experiences in his life. Elements of his philosophy of the natural world can be traced back to his childhood years on a farm cut out of the Michigan wilderness, his career as a horticultural scientist, and his bid to save rural civilization. Bailey constructed an outlook of duality, which sought to balance seemingly antithetical elements, including: science and spirituality, fact and fancy, and city and country. Bailey did not hold that these competing elements cancelled each other; instead, they complemented each other. The key was to find the proper balance along the spectrum of these elements and the result would be a rich and satisfying outlook on life. If this balance was not attained the consequences for individuals and humanity were the same but on different scales. For humans, a life lived out of harmony with their daily surroundings led to a life that could not meet its full potential of happiness and productivity. When you compile all of these unfulfilled individual lives which are out of harmony with each other and the natural world, the result was that civilization could not meet its potential and its progress would be hampered.

Bailey's outlook on the natural world shaped his pedagogical approach toward all age groups, from very young children to adults; however, the group most affected by his dual outlook and pursuit of balance were children who had not yet entered secondary school. These younger children were encouraged to develop a sympathetic outlook on the natural world as opposed to a utilitarian outlook where nature was

something solely to put to humanity's use, but this viewpoint was to be informed by accurate knowledge to the point that it did not overwhelm the student with too many facts. In these younger children, especially, achieving a balance between science and spirituality and fact and fancy was paramount to developing a lifelong relationship with nature. The primary motivation behind Bailey's pedagogical approach was to guide children toward a love and understanding of rural civilization; it was hoped that these rural children, who were his primary concern, would remain on the farm and bear the fruits of the land. He further hoped that children who chose a life in the cities, whether they came from rural backgrounds or not, could at least develop an appreciation for rural life and nature in general so that the country could remain a vital component of civilization.

Childhood and Education

Liberty Hyde Bailey, Jr. was born on March 15, 1858 to Sarah and Liberty Hyde Bailey, Sr. in South Haven, Michigan.²⁶² The elder Bailey left Vermont when, at the age of twenty-one, he bought a quarter-section of land on the western edge of the Michigan peninsula which jutted into Lake Michigan, near the newly established town of South Haven. When Bailey arrived at his land, he was surprised to find un-cleared, virgin forest and very little in the way of a settled farm community that he

²⁶² Among the more standard biographies of Bailey's life are: Philip Dorf, *Liberty Hyde Bailey; an Informal Biography* (Ithaca, NY: Cornell University Press, 1956), Andrew Denny Rodgers, *Liberty Hyde Bailey; a Story of American Plant Sciences* (Princeton: Princeton University Press, 1949), and Eleanor F. Wedge, "Liberty Hyde Bailey," in *American National Biography*, eds. John A. Garraty and Mark C. Carnes (New York: Oxford University Press, 1999).

had been led to believe existed. His first reaction was to forfeit the claim and to go to an established town further inland, Kalamazoo. While his stay in Kalamazoo would be brief, it served a purpose; here he met and married fellow-New Englander Sarah Harrison in 1845. The couple decided to return to the South Haven region to establish a homestead; they purchased forty acres of land south of the land that Bailey had earlier forfeited and began their life on the frontier. Two sons were born, Dana and Marcus, while the family lived on their original homestead. After ten years, Bailey Sr. decided to move the family closer to South Haven, back to the region he had left a decade earlier. The Baileys purchased land and built a home just in time for the arrival of their third son, Liberty Jr.

Bailey cleared the virgin forest, planted fields and even planted an apple orchard.²⁶³ The Bailey's nearest neighbors were a small group of Pottawatomic Indians who lived on a clearing in the northern part of their land. The Baileys agreed to allow the Indians to remain there as long as their family lived and farmed the land. Because of their proximity, it was quite common for young Bailey Jr. to encounter Indians in their habitat, and to even hunt and explore with them on occasions. In

²⁶³ According to Susan Gray, the early settlers in Michigan were primarily from northeastern states that had left their homes and followed the Erie Canal west to build new lives. Agriculture was of utmost importance to these "Yankees" and they poured their efforts into commercial farming. Bailey Sr. was no exception to this pattern, establishing a successful farming business and orchard. Susan Gray, *The Yankee West: Community Life on the Michigan Frontier* (Chapel Hill: University of North Carolina Press, 1996). Even today, this region of Michigan is known for its commercial farms where one can go and purchase endless varieties of apples, cherries, and peaches.

return, the Indians frequently visited the family home to watch the New Englanders in their habitat; as a result Bailey Jr. developed a great respect for the Indians.

Many natural scientists claim that they were born to be scientists because they experienced a connection with the natural world at a very young age. The same is true of Bailey Jr.; he grew up in the midst of the Michigan wilderness, and thus it would be a surprise if his daily encounters with the natural world did not affect his outlook on nature. Young Bailey spent his youth wandering through the nearby fields, forests and creeks, exploring and experimenting with nature. But there were tragic events in his life that also caused him to turn to nature as a companion.

Historian Stephen Fox maintains that nature lovers often point to childhood illnesses or losses--which forced them to turn to nature for interaction and comfort--as pivotal developmental moments in their relationship with nature.²⁶⁴ In Bailey's case he cited the death of his brother to scarlet fever and his mother to diphtheria before he turned five years of age. The loss of his mother was particularly difficult for the young boy; he recalled, well into his nineties, the moment of her passing and the regret that filled him because he had lost her influence.²⁶⁵ Outside his back door was his consolation, the fields, the woods and his mother's garden, of which he took over the care in her honor. One of the features outside his back door, along the edge of one of the fields, was a brook which brought him hours of pleasure. In the middle years of his life, he recalled the sounds that the brook made as it rolled over stones, the smell of the banks

²⁶⁴ Stephen Fox, "Liberty Hyde Bailey: The Earth as Whole, the Earth as Holy," *Orion*, 1983, 14-18.

²⁶⁵ Dorf, *Liberty Hyde Bailey*, 6.

as the snow melted back to reveal the edge, and the signs of the season that the inhabitants provided through their presence and activities; the brook taught him much about nature, so much so that as an adult he returned to his memories of it and the lessons it taught him. But this brook also inspired him to find awe in the out-of-doors; as hard as he tried to find the source of this constantly flowing presence, he never did. He finally concluded that the brook “came somewhere from the Beyond and its name was Mystery.”²⁶⁶ The sense of mystery only compelled him to try to understand it all the more:

The mystery of this brook was its changing moods. It had its own way of recording the passing of the weeks and months. I remember never to have seen it twice in the same mood, nor to have got the same lesson from it on two successive days; yet, with all its variety, it always left that same feeling of mystery and that same vague longing to follow to its source and to know the great world that I was sure must lie beyond. I felt that the brook was greater and wiser than I. It became my teacher. I wondered how it knew when March came, and why its round of life recurred so regularly with the returning seasons. I remembered that I was anxious for the spring to come, that I might see it again. I longed for the earthy smell when the snow settled away and left bare brown margins along its banks. I watched for the suckers that came up from the river to spawn. I made a note when the first frog peeped. I waited for the unfolding spray to soften the bare trunks. I watched the greening of the banks and looked eagerly for the bluebird when I heard his curling note somewhere high in the air.²⁶⁷

But even with all his inquiry it remained a source of mystery, even into his adulthood as a trained scientist: “I am sure that I know the brook to the better because I know

²⁶⁶ L. H. Bailey, "An Outlook on Winter," *Country Life in America* 1, no. 2 (December 1901): 37-41, 37. This article was reprinted in its entirety in his 1903 publication, *The Nature Study Idea*. L. H. Bailey, *The Nature-Study Idea Being an Interpretation of the New School-Movement to Put the Child in Sympathy with Nature* (New York: Doubleday Page, 1903), 124-128.

²⁶⁷ Bailey, "An Outlook on Winter," 37.

more about the things that live in its little world; yet that same mystery pervades it and there is that same longing for the things that lie beyond.”²⁶⁸ His surroundings instilled in him a love and respect for nature and taught him that even through he may know particular facts, that there remained mysteries in nature that rational inquiry and fact-collecting could not solve.

Following the death of his mother, his father married Maria Bridges, a distant relative who had come to live with the Baileys when Sarah was still alive. Maria proved to be a positive influence on Bailey Jr. as she was forced to tolerate the misadventures of the boy and his nature exploration; she rarely discouraged his fascination with the living creatures of the surrounding wilds. Young Bailey turned an abandoned tool shed behind the house into a museum where he could study and display his specimen collections. When his father forced him to clean the tool shed, he brought his experiments indoors. In one memorable incident, Maria opened the oven door to find newly hatched milk snakes—here she drew the line and made the boy remove his experiment. However, Bailey Jr.’s father and stepmother quickly realized that his passion for studying organisms was not just a passing fancy and they allowed him to conduct his studies on the condition that he did so outside and it did not interfere with his chores.

²⁶⁸ Ibid., 38.

The autumn following his fifth birthday, Bailey entered school in South Haven, a period in his life which also proved incredibly influential.²⁶⁹ He was very excited about learning and threw himself into his studies wholeheartedly. After mastering the basics of several subjects, he was allowed to request another subject of study from his teacher, Mrs. Julia Fields. Bailey requested a course in natural history, a subject about which Fields knew very little. Despite her lack of knowledge, she allowed the boy to recite to the class a page or two a day for the school year. More importantly, through her example, she taught him lessons that would inform his later teaching style and his pedagogical approach to nature-study: the systematic organization of information, first-hand observation of the natural world, and finally, to learn about those things that were near at hand in the local surroundings.

Bailey's desire for knowledge was insatiable. There were three books that he was allowed to read without his father's approval: the *Bible*, *Pilgrims Progress*, and Josephus' *History of the Jews*. His father would bring him a book every year when he returned from the Grand Lodge of the Free Masons (where the elder Bailey was an officer). Bailey Jr. finally learned that there was a small town library in the back of a store and immediately went to check it out. He returned home with a book and gave it to his father for approval. His father returned it a few days later and told him that the book was beyond his comprehension, but the author sounded like an honest man

²⁶⁹ In a speech given before an audience at the ninth annual meeting of Fairchild Gardens, Bailey claims that he never attended grade school. It is unclear if he meant that he never attended a school that was set aside for the elementary grades or if he did not remember the events of his childhood, although by all accounts Bailey remained sharp in the years prior to his death in 1954. "Dr. L.H. Bailey Speaks," *The American Eagle and Horticultural Review*, 2 May 1947, 1, 3-4.

so he let him read it; this was, at the age of 11 years, his first introduction to Darwin's *Origin of Species*. On a visit to his relatives, his cousin introduced him to a botany textbook, *Field, Forest, and Garden Botany*, by Asa Gray. Bailey studied the textbook from cover to cover and learned about the features and classification of plants. Further, when Bailey learned that Gray was a Professor of Natural History at Harvard University it must have sparked a realization that a similar position was a possibility for him in the future. Natural history and horticulture came naturally to the youth. During the summers and in his free time during the school year, he assisted his father in the work on the orchard and soon began to excel at grafting, in addition to plant and animal identification. He was soon in demand by local farmers to help with grafting. All the while his interest in botany was growing.

There were two prodigious meetings in Bailey's adolescence in South Haven which would later shape his career. The first was his acquaintance with Dr. William J. Beal, a professor of botany and horticulture at Michigan Agricultural College. The second was his friendship with Mrs. Lucy Millington, an amateur botanist.

As his questions about the natural world grew, Bailey sought answers in books, but there was only so much that books could reveal to him. He remembered that a professional botanist, Dr. William J. Beal, occasionally visited South Haven to meet with the South Haven and Casco Pomological Society, an organization with which Bailey became involved through the influence of his father, who was a charter member. Bailey took it upon himself to invite Beal to give a talk before the society. Beal accepted the invitation and spoke on the "Beauties of a Frog Pond". Later that

evening, Beal, who was staying with the Baileys, discussed advances being made in botany with his young host. This meeting would prove to be influential as Bailey would go on to study under Beal at Michigan Agricultural College and become his colleague when Bailey accepted his first academic position at his alma mater. Later in life, the two would disagree over the proper methods of nature-study.

In the spring of 1876, when Bailey was an adolescent, a botanist named Mrs. Lucy Millington came to South Haven. She accompanied her brother, Dr. Bishop, who had come to establish a practice and who had brought his family with him. After purchasing a small peach farm, she returned home to eastern New York to convince her husband and son to join her out west. She and her family lived in Michigan for only two years, but in those years she had a profound impact on young Bailey's life, an effect that Bailey recalled in an article in the botanical journal *Torreyia* in which he memorialized her. Bailey wrote that his "memory of her is yet a luster of my youth."²⁷⁰

Millington was the second botanist with whom Bailey had ever interacted and he was excited to learn of her arrival in South Haven. After their initial meeting in which they discovered that they had much in common, Bailey became a regular visitor. They would discuss botanical topics and she would relay stories of her own collecting trips back east. Soon they began exploring the habitats surrounding Lake Michigan together. Millington shared her expertise in identification and even introduced him to the genus *Carex*, or the sedges, which he would study for much of

²⁷⁰ L. H. Bailey, "Lucy Millington," *Torreyia* 39 (November-December 1939): 159-163.

his life. Before she returned to New York she left him a memento that he cherished for the rest of his life—her bright-red botany collecting case. Six decades after their initial meeting Bailey still spoke of Millington with great affection, characterizing her as a “naturalist, writer, nurse to the afflicted, endowed with keen observation and poetic fancy, a leading spirit in her neighborhoods”.²⁷¹

Between 1830 and 1880, according to Elizabeth Keeney in her book *The Botanizers*, botany was in its heyday as a popular pursuit among Americans due to the fact that it fostered physical, mental, and moral improvement.²⁷² Women, in particular, were drawn to botany because it was democratic and genteel. However, after this half-century of openness, botany began to professionalize and women’s participation in botany allowed critics to equate the pursuit in its traditional form with sentimentalism and amateurism. Professionals sought to etch clear boundaries through the 1880s between professional botany with its laboratory approach and amateur botany which was field and identification orientated.²⁷³ It is important to note that Bailey’s early encouragement in natural history did come from influential women in his life, including his mother Sarah, his step-mother Maria, his teacher

²⁷¹ Ibid., 163.

²⁷² Keeney, *The Botanizers*.

²⁷³ Charles Bessey, a botanist who spent the majority of his career at the University of Nebraska and is recognized for his development of high school botany textbooks, and John M. Coulter, an active participant in the attempt to define nature-study in the Botany department at the University of Chicago, were held to be the leaders in the professionalization movement. They both advocated the laboratory method of study of botany, as opposed to the natural history approach, which focused on collecting and identifying plants.

Mrs. Julia Fields, and his friend Mrs. Lucy Millington. He was learning natural history, and specifically botany, before they became professional pursuits. The values these early lessons in natural history taught him remained with him even as he matured into a scientist and continued through the duration of his life.

In a talk given at the Fairfield Garden late in his life, Bailey remarked that he did not know as a young boy whether he would become an ornithologist, an entomologist or a botanist.²⁷⁴ He had a myriad of interests as a young boy, all centered on the natural world. Finally, he decided that agriculture would be his future and in the fall of 1877 he enrolled in Michigan Agricultural College in nearby Lansing, the school where Dr. Beal, his former acquaintance, was on the faculty. It was during his college years that Bailey formulated a life plan based upon his expectation that he would live to at least seventy-five years of age: the first twenty-five years would be dedicated to learning, the next twenty-five years to teaching and scholarship, and the final twenty-five years to do whatever he chose to do.²⁷⁵

Like his childhood years, his college years were formative years both personally and professionally. The first day he arrived he and his fellow members of

²⁷⁴ "Dr. L.H. Bailey Speaks."

²⁷⁵ Bailey scholar, John Azelvandre, has argued that this life-plan is a myth that has been perpetuated by other Bailey scholars. However, Bailey confirmed his plan in a speech given in his later life at Fairchild Gardens. Regardless of whether this was a plan that Bailey laid out in his youth, the numbers were a bit off of the actual course of his life. In actuality, Bailey dedicated twenty-five years to learning, thirty years to teaching and scholarship, and forty-one years to whatever he chose, which ended up being scholarship, collecting and public speeches. John P. Azelvandre, "Forging the Bonds of Sympathy: Spirituality, Individualism and Empiricism in the Ecological Thought of Liberty Hyde Bailey and Its Implications for Environmental Education" (Ph.D. diss., New York University, 2001).

the freshman class, about 50 students, were required to sit for an entrance exam to determine if they would remain in college. As he sat, he noticed a pretty girl across the room--she also happened to be the only girl in the room--and their eyes met. Her name, he later found out, was Annette Smith, and within five years she would become his wife.

The mornings at Michigan Agricultural College were dedicated to classroom instruction, and Bailey undoubtedly learned much in these hours about botany, entomology, and zoology that he would use later in life. In the afternoon hours students were expected to perform manual labor, and Bailey was assigned the task of collecting specimens for the zoology and botany classes. The purpose behind the afternoon labor period, according to college officials, was to ensure that the men and women, many of whom had left the farm for school, did not lose touch with the land. Maintaining a strong connection to the land by working on it and exploring it would become a central theme in Bailey's career.

Another important aspect of Bailey's career was writing and editing. His first foray into the field was at college. He worked on a quarterly titled *The College Speculum*, the editorial board of which consisted of two representatives from campus literary societies, two representatives from fraternities, and one representative from the Natural History Society, which was Bailey.²⁷⁶ He would serve as editor-in-chief and journalist during his college years. The skills he acquired in this position

²⁷⁶ For more on the early years of Michigan Agricultural College, its faculty, and curriculum, see: Madison Kuhn, *Michigan State: The First Hundred Years, 1855-1955* (East Lansing: Michigan State University Press, 1955), 133.

undoubtedly aided him in his later life as an author and editor of a large number of books and articles. He also developed a reputation as a reformer, but in a manner that was nevertheless respectful of authority. As the editor-in-chief, he suggested a multitude of reforms, including new classes, the hiring of a full-time librarian, and even changes in course logistics. Many of these reforms were viewed as reasonable and were instituted when possible.²⁷⁷ One of Bailey's favorite evening activities was when the President of the college, Theophilus Abbot, opened his home to students to share literature with them.²⁷⁸ Bailey emulated President Abbot later in his teaching career and regularly opened his home to young farm boys in order to do the same; he shared Abbot's conviction that students should be as well-rounded as possible and that their education should include not only practical skills, but the art of appreciation.

Bailey was dissatisfied with the availability of courses in practical agriculture and horticulture as these classes were often taught using a textbook, with very little in the way of hands-on experience. His dissatisfaction with the pedagogical approach to these key courses would greatly influence his teaching in the future: Bailey would encourage hands-on experiences with actual specimens, and, if at all possible, would take the students into the out-of-doors to study objects in their naturally-occurring contexts.

²⁷⁷ *Ibid.*, 134.

²⁷⁸ *Ibid.*, 90.

In 1882 Bailey graduated with a Bachelor of Science degree. He was poised to begin his career, but even more anxious to solidify a personal relationship with Annette Smith, with whom he had maintained a relationship even after she had transferred to another nearby school. After a brief stay at home in South Haven, Bailey decided to make use of his writing and editorial skills and won a job on the Springfield *Morning Monitor*. Soon Bailey was the paper's legislative correspondent, with responsibility for reporting on the activities of the House of Representatives in Illinois. Having proved his excellent writing and reporting skills, he was soon offered a position as the city editor, which included a salary of twenty dollars per week, an amount that would be enough to support a wife. But before he could accept the more lucrative position, he was offered an opportunity to return to his first love, botany. Beal, his teacher and mentor at Michigan Agricultural College, had recommended him as the perfect candidate to serve in a two-year position as special assistant to the famous Harvard botanist, Asa Gray, the man whose book he had studied so diligently as a youth. Gray had extra funds and wanted someone to work over some plants that had been collected by George C. Joad and donated to the Herbarium at Harvard by Kew Gardens, to determine what should be added to the herbarium. The position would be a tremendous pay-cut from the editor position, from twenty-dollars to a mere seven dollars a week, and there was a trial period, but Bailey gladly jumped at the position as it provided him work in his beloved field of botany with a world-renowned botanist. And the salary was good enough that, after he successfully proved himself during the trial period, he could marry Smith. The two were wed on

June 6th, 1883 and immediately set up residence in Cambridge. Smith would be many things to Bailey in their fifty-five year marriage: the love of his life, an important part of his support system, a frequent travel partner as he ventured around the world looking at plants, and the mother of his two children, Sara May and Ethel Zoe.

Bailey's Harvard position lasted for only two years and he received his first permanent, professional job offer before it ended. The offer came in 1885 from his alma mater, when he was asked to return and help them establish a chair in horticulture and landscape gardening. Bailey accepted his first academic position and began an incredibly productive career that reflected many of the values and practices he had acquired in his youth and training. He remained a curious investigator who was committed to both teaching and learning. Further, Bailey was committed to examining questions from every side in order to determine the best approach to the problem; this attitude kept him from drawing distinct boundaries between his pursuits as a professional and as a public figure. Bailey was a scientist, poet, philosopher, teacher, author, editor, and lecturer, among many other things, and he was able to reconcile these activities because he believed each offered a vital approach to solving the problems of rural America.

Straddling the "Garden Fence"

Bailey's decision to accept a position in horticulture and landscape gardening was questioned by colleagues at Harvard when he announced his acceptance. Asa Gray, for example, inquired as to why he would no longer be pursuing a career in

botany proper. John Merle Coulter dismissed his future career because horticulture was not important, nor a legitimate scientific field like botany.²⁷⁹ Bailey did not understand their disdain for horticulture and maintained that a horticulturalist must also be a botanist. Gray and Coulter's reaction was symptomatic of a larger condescension toward horticulture. Horticulture was viewed by scientific men as a practical pursuit, aimed at increasing crop yields and creating more viable varieties; therefore, horticulture was devalued because theory was not involved. Further, the laboratory of the horticulturalist was the garden, which because of its association with home, did not allow for the professional distance from the public sphere that was becoming the norm for professional scientists.²⁸⁰ Horticulturalists were not taken seriously as producers of natural knowledge because they worked toward practical ends in an atmosphere that was not considered to be scientific.

In a tribute to Bailey, written the year after his death, his colleague at the Bailey Hortorium, George H. M. Lawrence, acknowledged that when Bailey began his work in horticulture, botanists thought very little of the pursuit and did not accommodate the needs of horticulturalists.²⁸¹ As botany professionalized there was

²⁷⁹ Dorf, *Liberty Hyde Bailey*.

²⁸⁰ Katherine Pandora discusses the devaluation of the horticulturalist and the knowledge they produced in her piece on Luther Burbank. Burbank was not respected by most scientists because he worked in the grounds at his home and his only formal training came from what he called, "The University of Nature". Interestingly, though, one scientist who took Burbank and his work seriously, at least initially, was Liberty Hyde Bailey. Pandora, "Knowledge Held in Common."

²⁸¹ George H. M. Lawrence, "Liberty Hyde Bailey, 1858-1954: An Appreciation," *Baileya* 3 (March 1955): 28.

a great deal of tension between scientists and amateur botanizers, especially as the nineteenth century drew to a close and the science of botany was professionalizing. One major difference between the two groups was their goals: the goal of the scientist was held to be the disinterested advancement of knowledge, while the amateur was interested in “personal enrichment”.²⁸² Keeney acknowledges that “[m]ore than any other factor, this led to the declining scientific status of amateurs in the closing years of that century.”²⁸³ This increasing separation between amateur and scientific pursuits caused scientists to disregard popular activities, including horticulture and landscape gardening.

Bailey was acutely aware of the discrimination against horticulture and horticulturalists by botanists, as he witnessed firsthand when he announced his new position to his colleagues at the Harvard Herbarium. He was also aware that discrimination and misunderstanding ran both ways; horticulturalists and agriculturalists did not understand the value that theoretical science could bring to their pursuits. Bailey did not see a legitimate reason for the gap between the two spheres. He believed that horticulture should be an applied science, based on sound biological research. The year that he accepted his position in horticulture at Michigan Agriculture College he gave a lecture entitled “The Garden Fence” at the Country

²⁸² Keeney, *The Botanizers*, 3-4.

²⁸³ *Ibid.*, 4.

Meeting of the Massachusetts State Board of Agriculture.²⁸⁴ In this address he contended that botanists and horticulturalists were standing on each side of the garden fence: botanists outside of the garden, unwilling to enter the garden to study the cultivars or recognize that any useful work was being performed inside, and the horticulturalist inside, not fully realizing the advantage that science could bring to their garden pursuits. The garden fence separated the theoretical from the practical; but Bailey argued that all knowledge was practical and benefited humankind, so he considered this to be an artificial barrier. Bailey proposed that botanists should scale the garden fence and study the cultivated plants scientifically. He lamented the fact that the “botanist claims the plant when it is a part of wild nature, but loses his interest when it becomes immediately useful to man.”²⁸⁵ Further he contended that horticulturalists should bring science into the garden and benefit from this new knowledge. Bailey issued the following plea to the audience, filled with farmers and horticulturalists:

We must get outside the garden fence as well as inside it. We must demolish the line between science and practice. This is the new horticulture. Deep down in nature’s heart, beneath the thorns and perplexity, truths are hid which are vital to the farmer and the gardener. Then do not discourage the pursuit of science, however much you may have been taught to regard it as opposed to practice. Science is practice. All so-called popular and useful science must be founded upon recondite facts and principles. The more we know of nature as nature, the more readily can we understand nature in the garden.²⁸⁶

²⁸⁴ The lecture, given in December 1885, was published the following year. L. H. Bailey, *The Garden Fence: Lecture* (Boston: Wright & Potter Print. Co., 1886).

²⁸⁵ *Ibid.*, 30.

²⁸⁶ *Ibid.*, 31.

Bailey was a man who would straddle the “garden fence” for the entirety of his career. He was a credentialed scientist who also considered himself a horticulturalist and a naturalist, he published for both professional and public audiences, and he offered both scientific and practical knowledge. Because Bailey believed that horticulture should be a scientific discipline, based upon sound biological research, he used the tools of taxonomic botanists and applied these to cultivated plants in order to solve problems of classification, identification and nomenclature, a new approach at the time.

Thirty-five years after his plea for horticulturalists and botanists to learn from each other, his approach was still not very well accepted by scientists, Bailey launched a new publication, *Gentes Herbarum*, in 1920, in the latter part of his career, dedicated to the publication of taxonomic studies of cultivars and their wild relatives. In his personal research, he first studied the native species and then applied this knowledge to the cultivar. In 1935, following his retirement, he founded a research institute, the *Bailey Hortorium*, dedicated to the collection and study of both wild and cultivated plants.²⁸⁷ Further, as he believed that farmers, gardeners and horticulturalists should have a scientific understanding of common plants he wrote a number of volumes in this vein. The first, *Talks Afield: About Plants and the Science*

²⁸⁷ Dorf explains that the term *Hortorium* was created by Bailey to encompass the expanded purpose of the depository, to create a “horto-botanical” collection of both cultivars and wild plants. The *Hortorium* became an administrative unit of the College of Agriculture at Cornell.

of *Plants*, was written while Bailey was still at Harvard and explains botanical classification and nomenclature to the general public.²⁸⁸

Bailey's stay at Michigan Agricultural College was brief, lasting only from 1885 to 1888. After he gave a series of invited lectures on horticulture at Cornell University in Ithaca, New York, the administration was so impressed with him that they offered Bailey a position as chair of practical and experimental horticulture in the Department of Agriculture. Bailey accepted the position and arrived on the Cornell campus in early 1889.

Cornell was the ideal place for Bailey because he shared the same philosophy on which the institution had been founded. The university was chartered in 1865,

²⁸⁸ L. H. Bailey, *Talks Afield: About Plants and the Science of Plants* (Boston: Houghton, Mifflin and Company, 1885). *Talks Afield* was not only Bailey's first book written specifically for a non-technical audience, it was the first book he published; this book set the tone for his concern for the education of gardeners, farmers, and horticulturalists in the pertinent technical aspects of botany. Other books written to provide technical and scientific knowledge about plants to this audience included: L. H. Bailey, *Plant-Breeding: Being Six Lectures Upon the Amelioration of Domestic Plants*, Fourth ed. (New York: The Macmillan Company, 1906), L. H. Bailey, *Manual of Cultivated Plants* (New York: The Macmillan Company, 1925), L. H. Bailey, and *How Plants Get Their Names* (New York: The Macmillan Company, 1933). Bailey was also the editor and contributor to a series of books, known as The Rural Science Series, the purpose of which was to provide scientific information in a non-technical manner for the farmer. Bailey's authored publications that were a part of this series included: L. H. Bailey, *The Principles of Fruit-Growing*, ed. L.H. Bailey, The Rural Science Series (New York: The Macmillan Company, 1897), L. H. Bailey, *The Principles of Vegetable-Gardening*, ed. L.H. Bailey, The Rural Science Series (New York: The Macmillan Company, 1901), L. H. Bailey, *The Principles of Agriculture; a Text-Book for Schools and Rural Societies*, ed. L.H. Bailey, The Rural Science Series; (New York: The Macmillan Company, 1898), and L. H. Bailey, *The Pruning-Book. A Monograph of the Pruning and Training of Plants as Applied to American Conditions*, The Garden-Craft Series (New York: The Macmillan Company, 1898). He also edited approximately forty books for the series.

following the first Morrill Land Grant Act of 1862, a piece of legislation which gave acreage to several states and territories to establish colleges to teach mechanical arts and agriculture. Cornell became New York State's Land Grant Institution. The founder of the university, Ezra Cornell, had been a farmer and believed in the "democratization of knowledge". He contended that agricultural subjects were as important as traditional subjects in the university setting and that well-informed and educated farmers were integral to productive farming.²⁸⁹ Jacob Gould Schurman, professor of Christian ethics and moral philosophy, and a future President of Cornell University, spoke the following words in the Founder's Day address in 1888:

The divorce between the universities and activities of life is astounding... We are still aristocratic in university matters. We think there are some subjects too common for university instruction. But a People's University, if it is true to the spirit of our age, must hold all subjects equally reputable, and provide instruction in all alike... The analysis of soils is as important as the analysis of literature... A house is as rational as the geometry it embodies... In God's universe there is nothing common or unclean, and whatever is known about it must have a place in the curriculum of a People's University.²⁹⁰

Schurman would serve as the President of the university from 1892 to 1920; thus this attitude was prevalent during Bailey's tenure at Cornell.²⁹¹

²⁸⁹ Ruby Green Bell Smith, *The People's Colleges: A History of the New York State Extension Service in Cornell University and the State, 1876-1948* (Ithaca, NY: Cornell University Press, 1949), 1. In addition to Smith's work, which traces extension work at Cornell, Gould Colman's text discusses the College of Agriculture at Cornell in its entirety: Gould P. Colman, *Education & Agriculture: A History of the New York State College of Agriculture at Cornell University* (Ithaca, NY: Cornell University Press, 1963). Morris Bishop's history of Cornell provides a broader history of the institution: Morris Bishop, *A History of Cornell* (Ithaca, NY: Cornell University Press, 1962).

²⁹⁰ Bishop, *A History of Cornell*, 308.

Cornell benefited from Bailey's presence as well. The College of Agriculture grew by leaps and bounds, as did the number of students. Due to Bailey's strength as a teacher and a leader, and his ability to fill positions with quality people, the College of Agriculture became a popular destination for students. Shortly before Bailey arrived at Cornell, in 1888, the number of Agricultural students was 58; the year that Bailey became Dean, the number had almost tripled to 142.²⁹² By the time that Bailey announced his retirement in 1912, the number of students was up to 1,700.²⁹³ During the 1907-08 school year, the Department of Agriculture had the highest number of graduate students in the University at 44 students; this figure was more than double what the departments of zoology and botany had combined.²⁹⁴ The value of an agricultural education was becoming clear and agriculture was becoming an increasingly important pursuit for young men in New York State. Much of the credit must go to Bailey, who the students affectionately called "Our Dean".

Cornell became a true college of the people when the College of Agriculture implemented its extension services in 1886. The Farmer's Institutes were established in order to bridge the gap between the university faculty and the farmers of New York State. The motivation was two-fold: to use the knowledge generated at the university

²⁹¹ Bailey finally retired from Cornell in 1913 at the age of 55 years.

²⁹² Edwin E. Slosson, "Great American Universities--X: Cornell University," *The Independent*, 7 October 1909, 785-804.

²⁹³ This number is part of a speech that Bailey gave during a dinner in his honor and was summarized in the *New York Times*. "Cornellians Hail Prof. L.H. Bailey," *New York Times*, 6 March 1912: 8-9.

²⁹⁴ Slosson, "Great American Universities--X: Cornell University."

to help the farmers of the state and to make the farmers aware of the resources available to them through the college.²⁹⁵ Although Bailey was not yet on campus when Schurman gave his address or when the first Farmer's Institute was implemented, he immediately adopted the cooperative attitude and went to work promoting the interests of farmers and agriculture and raising their status on campus.

In 1894, after Bailey had arrived at Cornell, the Nixon Act was passed by the New York state legislature; the bill, pushed through by Assemblyman S. F. Nixon, appropriated state funds for extension work, and allowed Bailey to institute the "extension schools" at Cornell.²⁹⁶ An extension school session consisted of one to two weeks of instruction on topics that were pertinent to farmers in a particular region. University faculty and staff would give popular lectures and demonstrations to the farmers and their families. Bailey himself participated and became a popular lecturer with farmers.

²⁹⁵ Smith, *The People's Colleges*, 6.

²⁹⁶ Nixon was from the vineyard region of Chautauqua Country and was particularly interested in the problems that grape farmers were experiencing in his home county because of disease. His support of the bill and of Cornell University was secured when Bailey identified the disease as black rot and developed a spray to kill the fungus, and thus saved the assemblyman's vineyard. The Act allotted \$8,000 for experimental work in the region. The Nixon Act was a reaction to an agricultural depression in New York State between 1891 and 1893 which caused many to abandon their farms for the city. The purpose of the Nixon Act was to respond to the depression with information to combat future downturns in the rural economy. The state support continued and even increased periodically until 1900, when funding was temporarily halted because of lack of funds, and was resumed in 1910. Federal contributions for extension services didn't begin until 1914 when the Cooperative Extension System was developed through the passage of the Smith-Lever Act. Bishop, *A History of Cornell*, 313, and Smith, *The People's Colleges*.

The purpose of the extension program at Cornell was to bring information to the farmer for the sake of husbandry, and the participants quickly realized that the farm was a composite of many parts, including the field and the house, and many players, including the farmer, his wife and his children.²⁹⁷ Realizing the holistic nature of farm life, Cornell extension also began to address the needs of farm wives and children. The first “Women’s Institutes” were held almost ten years after the “Farmer’s Institutes” began. In fact, the farmers requested their first female speaker when they selected Anna Botsford Comstock, an Instructor of Nature-Study and later Professor at the university, to speak on “The Happier Side of Farm Life”.²⁹⁸ In 1899, Professor Bailey decided it was time to begin more formal extension work on behalf

²⁹⁷ To explore the link between extension work, the land grant universities and democracy see: Scott J. Peters, “Extension Work as Public Work: Reconsidering Cooperative Extension's Civic Mission” (Ph.D. diss., University of Minnesota, 1998).

²⁹⁸ Smith, *The People's Colleges*, 21. In fact, Anna Botsford Comstock was appointed to the position of Assistant Professor in 1898, the first woman to achieve this position at Cornell. Unfortunately, due to the prejudices of the Cornell Trustees, the title was removed and replaced with the title Lecturer, although she retained an Assistant Professor’s salary. In 1913 she was again appointed Assistant Professor and became full Professor in 1920. For more on the plight of women at Cornell see: Charlotte Williams Conable, *Women at Cornell: The Myth of Equal Education* (Ithaca, NY: Cornell University Press, 1977). And for more on the life of Anna Botsford Comstock and her husband, John Comstock, a Professor of Entomology at Cornell, see: Anna Botsford Comstock, *The Comstocks of Cornell: John Henry Comstock and Anna Botsford Comstock* (New York: Comstock Publishing Associates, 1953), Pamela M. Henson, "'Through Books to Nature': Anna Botsford Comstock and the Nature-Study Movement," in *Natural Eloquence: Women Reinscribe Science*, eds. Barbara T. Gates and Ann B. Shteir (Madison.: University of Wisconsin Press, 1997), and Pamela M. Henson, "The Comstocks of Cornell: A Marriage of Interests," in *Creative Couples in the Sciences*, eds. Helena M. Pycior, Nancy G. Slack, and Pnina G. Abir-Am (New Brunswick, NJ: Rutgers University Press, 1996).

of women on the farms and offered courses in home economics. At first the administration was reluctant, so Bailey initially created a reading course for women on the farm; he also needed someone to administer the course so, at the suggestion of Comstock, he hired Martha Van Rensselaer in 1900. Thus began the department of Home Economics.²⁹⁹

In addition to extension work, the Nixon Act recommended that the funding be used for nature education for rural school children. One of Cornell's most popular outreach programs was nature-study. This program paralleled the extension philosophy of serving rural America with expert information and guidance by gearing this program almost exclusively to the rural school teachers and their pupils.³⁰⁰ Rural teachers were provided with pedagogical and practical information and training regarding their natural surroundings so they could best convey the richness of rural life to their pupils. The ultimate goal was to keep these young children interested in farm life so they might stay on the farm, or at least, if they left they would appreciate the importance of farming and the farmer to their lives and the lives of all Americans.

The program began under the auspices of Isaac P. Roberts, the first Dean of the College of Agriculture, but in 1897, Bailey assumed responsibility for the

²⁹⁹ The role that the department of Home Economics played in women's education is addressed briefly in Conable, *Women at Cornell*. According to Rossiter, this was the one subject of study in the University curriculum that was dominated by women because men were not apt to dabble in women's work.

³⁰⁰ Bailey and his fellow faculty in the nature-study program were adamant that their resources first go to rural school teachers in New York State. After this audience was served then they also provided direction to urban teachers in the state. They were often forced to turn down requests outside of the state and the country for assistance.

program. When Bailey assumed leadership of the program he wanted to better understand his audience so he and Anna Botsford Comstock, who provided valuable assistance to Bailey as the Assistant Professor of Nature-Study, undertook a series of rural school visits, traveling the state by horse and buggy, to talk with the teachers about current practices and needs. This was indicative of Bailey's dedication to the success of the program. It was also indicative of his enthusiasm for not only nature-study, but any pursuit he undertook. He did not undertake any project that he did not feel he could serve to the best of his ability and when he did commit, he gave it his full attention and served passionately.

Under Bailey the program continued to provide training and resources to the teachers and even expanded their offerings as the appropriations from the Nixon Act increased over the years. The program reached out to its audience in a variety of innovative ways.³⁰¹ Cornell faculty involved with the program, and some hired specifically to work on nature-study, wrote articles for teachers to aid their preparation of lessons. The lessons were on living organisms and provided not only information regarding the subject-matter but also the nature-study point of view. Bailey held that in order for nature-study to effectively permeate the schools the movements had to affect those who were responsible for training the teachers, so the

³⁰¹ The following article details the multitude of approaches used by nature-study faculty and staff to reach out to its audience and highlights the major contributors in the program up to the point of its publication in 1944: E. Laurence Palmer, "The Cornell Nature Study Philosophy," *Cornell Rural School Leaflet* 38.1 (1944): 3-80.

leaflets were sent to the instructors of the teaching institutes in the state.³⁰² Secondly, they were sent to state rural schools automatically. In 1904 the most popular of these leaflets were published as a book titled the *Cornell Nature-Study Leaflets*, which was provided to teachers for the cost of shipping.³⁰³ These leaflets eventually became the *Cornell Rural School Leaflets*. The faculty also offered courses on campus during the regular school year for regular students and summer vacation and field courses for teachers on their summer break. These courses were often conducted by the university science faculty, including Bailey, who offered courses on botany in the summers.³⁰⁴ Further, for people who were unable to come to the campus there were Teachers' Institutes, conducted by Mary Rogers Miller, and a Home Correspondence

³⁰² L. H. Bailey, "Nature-Study on the Cornell Plan," *The American Monthly Review of Reviews*, April 1901, 463-464.

³⁰³ *Cornell Nature-Study Leaflets, Being a Selection, with Revision, from the Teachers' Leaflets, Home Nature-Study Lessons, Junior Naturalist Monthlies, and Other Publications from the College of Agriculture, Cornell University, Ithaca, NY, 1896-1904*, New York Dept. Of Agriculture. Nature-Study Bulletin; No. 1; (Albany: J.B. Lyon Co., 1904). Comstock took these leaflets and turned them into a useful handbook for teachers that is still in print: Anna Botsford Comstock, *Handbook of Nature-Study for Teachers and Parent, Based on the Cornell Nature-Study Leaflets, with Much Additional Material and Many New Illustrations* (Ithaca, N. Y.: Comstock Publishing Co., 1911).

³⁰⁴ An advertisement of the first summer school course in nature-study appeared in the *Scientific American* in August 1899. The program for the summer class included lectures and field study in the following areas: the study of insects, led by either John Henry Comstock or Anna Botsford Comstock; the study of plants, led by Bailey; and the study of farming, led by Isaac Roberts. The courses were free and open to state teachers, but others were allowed to join, although they were required to pay tuition for attendance. The goal of the summer institute was to give these teachers both knowledge and enthusiasm that they could take back to their students. In the summer of 1899, over one hundred students attended the summer course. Alice Dinsmore, "Nature-Study at Cornell," *Scientific American* 81, no. 7 (August 12, 1899): 101.

Course, also administered by Miller and later Comstock.³⁰⁵ An effort to reach out directly to students was also made by the faculty of the program. Some of the nature-study leaflets were written directly for students and they were also encouraged to form Junior Naturalist Clubs at their schools and communicate with the organization leader, John W. Spencer, otherwise known as “Uncle John” to the legion of club members. Students were asked to pay dues twice a month in the form of an essay on what they had learned about nature and these were sent to Uncle John, who, with the assistance of his staff, tracked student participation. In return they received the *Junior Naturalist Monthly*, a pamphlet that was issued to students that walked them through a nature lesson and provided inspiration for them to continue their studies. Again, these monthlies were written by nature-study staff, including Alice McClosky, Comstock, Spencer, and Bailey.³⁰⁶ At its height, the clubs boasted a membership of about 30,000 children.

One of the hallmarks of the decline of rural civilization was that the rural population in the United States was declining relative to the city population.

³⁰⁵ Bailey issued two packages of weekly lessons for the Home Correspondence School on Botany and Horticulture in 1902. Each package contained a year's worth of lessons along with suggestions for supplemental reading from his *Elementary Botany*, *Principles of Fruit Growing*, *Garden-Making*, and *Principles of Vegetable Gardening* textbooks. L. H. Bailey, *Lessons in Botany* (Springfield, Mass.: The Home Correspondence School, 1902), and L. H. Bailey, *Lessons in Horticulture, Fruit Growing, Floriculture, Etc.* (Springfield, Mass.: The Home Correspondence School, 1902).

³⁰⁶ Among the topics that Bailey addressed in the *Junior Naturalist Monthly* pamphlets were bird watching and gardening, including planning and construction. He also provided practical discussion on the cultivation of plants that children would be interested to have in their garden, including pumpkins and apples.

Previously an agrarian nation, the rural population in the United States totaled about half of the population in 1905, and it was declining.³⁰⁷ But Bailey was not overly concerned about the numbers. He believed that there was no need to worry unless the relative population dipped below one-fourth or one-fifth of the rural to urban population. New technologies had made farming more efficient and fewer farmers were needed to meet the needs of the population. That the farm population was decreasing did not mean the value of farming was diminishing—it simply meant that farming had become more efficient. One aspect of the rural population decline was the migration of farm boys who were leaving the country for employment in the cities. Bailey argued that this was a positive trend to a certain extent because cities benefited from the industriousness of the children raised on farms. In the end, however, although Bailey was not concerned that the rural population was dwindling, he was worried that the *rate* of people leaving the farm was too high.³⁰⁸

Bailey feared that one deleterious effect that life in the cities had was that it dulled people to the commonplace events and things around them. In the opening pages of *Outlook to Nature*, Bailey recalled a scene that he witnessed on a city street. This street was like many others at the turn of the century, with people hurrying to get to an unknown destination, paying little attention to one another, until in the middle of all the bustle a dog broke free and began running through the street followed by

³⁰⁷ Urbanization was caused by the flow from the country into the cities and by immigration. For more on the social impacts of urbanization see Raymond A. Mohl, *The New*, and Zane L. Miller, *The Urbanization of Modern America; a Brief History* (New York: Harcourt Brace Jovanovich, 1973).

³⁰⁸ L. H. Bailey, *The Outlook to Nature* (New York: The Macmillan Co., 1905), 71.

two children in pursuit of their family pet. Bailey observed that the crowd stopped and watched the scene and finally, when the children had successfully captured the dog, the crowd applauded. After the children had returned the dog back to their house, the people on the street came back to reality and seemed surprised that they had allowed themselves to be distracted from their business to watch the scene. Bailey commented that the people stopped because they witnessed a rare “episode of real spontaneous and unaffected human nature” in the midst of a world where life was scripted and people acted according to the script.³⁰⁹ He lamented the fact that humans in the modern world were losing touch with the common things in life. People, in general, were not satisfied with the lifestyle that the country afforded because it was slower and simplified. He claimed that in the early years of the twentieth century, people were now living in an age of the “superlative”, where people were habituated to the constant demand for change and were constantly reaching for something new; as a consequence, they had lost touch with the commonplace. Bailey wanted to turn this around and reconnect people with the commonplace, but feared this enjoyment was on the decline because more people were turning toward the city and as a result experiencing the quickened pace of modern life.³¹⁰

One of Bailey’s research agendas at Cornell was to study the reasons why children from the farm were leaving. He circulated a questionnaire to his students at

³⁰⁹ Ibid., 3.

³¹⁰ Ibid., 5.

Cornell to better understand the phenomena. From the questionnaire, Bailey discovered that those who remained on the farm to take up farming did so because they had a natural inclination for farming and a love of nature and the out-of-doors. Further, farming offered students an independent profession and being in the out-of-doors promoted good health.³¹¹ Students who remained on the farm were a minority, as many more students were choosing to leave the farm for the city and give up the family business. When students were asked why they gave up the profession of farming (he defined farming very broadly to include not only working the land, but dairy farming, etc.): 40% of the students argued that they gave up farming because they saw very little opportunity in the profession and it offered little financial reward; 20% said that it was too difficult as far as the physical labor; and 20% said that the farm lacked social opportunities.³¹² Other reasons that boys left the farm included: a lack of intellectual stimulation, the huge financial risk of farming, and a belief that life was too difficult and monotonous on the farm. Bailey sought to remedy these problems in order to re-stimulate interest in farm life.

It is important to note that Bailey was not against the cities or their growth. He recognized and accepted that the cities were vital to the modernizing nation. He also recognized that the comforts that modern life and the city brought were

³¹¹ L. H. Bailey, "Why Some Boys Take to Farming," *The Century Magazine*, August 1906, 612-617.

³¹² The results of this study were presented in various places, including: Bailey, *The Outlook to Nature*, L. H. Bailey, *The Training of Farmers* (New York: Century, 1909), and L. H. Bailey, "Why Boys Leave the Farm?" *The Century Magazine*, July 1906, 410-416.

beneficial and even pleasurable. Bailey praised Americans for their innovations that made home life easier and more comfortable, but he feared that these benefits may have resulted in the growing disconnection with nature that he discerned. He also claimed that although Americans liked to compliment themselves on being more advanced in the home than were Europeans, he asserted that Europeans were more in touch with nature—he cited the presence of European garden-rooms as an example.³¹³ Some critics feared an over-dependence on goods and luxuries by Americans, but he claimed that this was unwarranted because people needed materials to exist and as long as people did not rely on them to the extreme and recognized that there is much more to life than consumption, then reliance on material objects was normal and necessary.³¹⁴

One thing that Bailey did fear was that the intensity of the city was a drain on the human spirit. He instead sought balance. People should learn to renew themselves by returning to nature and the commonplace. He argued that this return to nature should not be expected to cure a person of the "ills of civilization", but would instead allow the restoration of a "proper balance and proportion" into individuals' lives, for people needed the country to balance out the city.³¹⁵ The city and the country were interdependent as the city needed the country as a restorative and the country needed the fresh ideas, approaches, business skills and cultural influences of

³¹³ Bailey, *The Outlook to Nature*, 140-141.

³¹⁴ *Ibid.*, 228.

³¹⁵ *Ibid.*, 7.

the city. The combination of these influences from the city and the country would produce what Bailey considered the “real American”—people who realize the importance of both city and country to America civilization.³¹⁶

Bailey recognized the trend toward nature as represented by the movement of people to the suburbs, the popularity of vacations in the country, and the proliferation of books about the out-of-doors. Even with this increased contact with nature, he nevertheless lamented the fact that this contact was not intimate or meaningful in a personal sense because people lacked information about the objects and phenomena they encountered. He contended that in order to fully enjoy and appreciate nature, one must also be knowledgeable about it.³¹⁷ This knowledge could be made accessible in a variety of ways, among them books, extension bulletins, and natural history courses, as well as others.

Most notably, if rural life was going to be saved, it would require a reorientation of both rural outlook and institutions. A new rural outlook could be stimulated through the development of a renewed cultural life for farmers in the form of a new appreciation for literature and poetry. Further, Bailey offered a plan to reorganize and strengthen traditional rural institutions such as rural churches and schools. In fact, because education was at the heart of the bid to save rural civilization, the rural school must be re-tooled. Bailey had a plan to change everything from the building on through to the curriculum.

³¹⁶ Ibid., 96.

³¹⁷ Ibid., 9.

The nature-study program at Cornell was the vehicle through which Bailey brought his plan for reorganization to the rural schools. The program was successful because it reached a large number of people and it addressed both philosophical and practical issues regarding the practice of nature study. Despite the fact that the success of the nature-study program at Cornell was the product of the work of a number of individuals, Bailey undeniably served as the figurehead for the program. He was involved in all aspects, from writing teacher and student leaflets and lessons for the home correspondence courses, to offering courses in botanical nature-study for teachers who took summer vacation courses. Bailey's work, and that of his staff, paid off. Cornell was recognized nationally as an important center for nature-study. In 1908, when the American Nature Study Society was formed, he was elected the first President, becoming the national figurehead as well. His involvement in nature-study was indicative of his philosophy that the boundaries between science and practice could and should be overcome. Science could provide the means for alleviating many of the problems of the modern world and this knowledge should not be confined to specialist publications and audiences. Instead, scientists should use their specialized knowledge to educate and train non-scientists in order to prepare them for a better life. Former student and colleague, George H.M. Lawrence, memorialized Bailey by calling him "the common man's botanist" because he applied the principles of botany in order to understand "the plants of the garden, of the cultivated fields, and of the forests."³¹⁸ Bailey worked hard to take the knowledge that he gained about the

natural world in the realms of botany, horticulture, and nature-study education and to condense it into a practical, useable form for a public audience in the form of books, articles, handbooks, encyclopedias, leaflets, textbooks, and public lectures. The result was a career that “straddled the garden fence.”

The fact that Bailey was so conscientious about examining all sides of an issue and desirous of eliminating the boundaries between science and practice made him attractive as a potential political figure. Bailey had the authority of a scientist, but was also interested in the real-world problems that people faced and was engaged in solving those that his expertise allowed him to act upon. In addition, he was an articulate commentator on many of the hotbed issues of the Progressive era, including education in preparation for modern life, the consequences of urbanization to rural life, and improving the daily lives of people through science and technology. He never sought office himself, but he was requested on a number of occasions to run for political office.

Bailey was a key figure in the bid to save rural civilization. He hoped that concern for the farmer would stimulate a rural movement, which he called the Country Life Movement.³¹⁹ The purpose of the movement was to educate farmers in

³¹⁸ George H. M. Lawrence, "Liberty Hyde Bailey, the Botanist," *Bulletin of the Torrey Botanical Club* 82 (1955): 305.

³¹⁹ The Country Life Movement was distinctly different from the “Back-to-the-land” movement that was also launched at the time. When approached by the Editor of the *Country Life in America*, Walter A. Dyer, about becoming a Consulting Editor for the “Back-to-the-Land” number of the magazine, Bailey responded: “My disposition is to serve, but I feel that I ought to say that I might approach the subject from the rural side rather than from the city side, and that I might not be so unreservedly

order to farm more efficiently and to be proud of what they did, and to teach the people in the city to respect the role of the farmer in society.³²⁰ He was such a strong advocate and leader that in 1896 Charles Howard Shinn, an important spokesperson for forestry in Berkeley, California, wrote to Bailey and suggested that he become a candidate for Secretary of Agriculture. Bailey was proud to receive the consideration and respect, but politely declined the offer due to his political leanings and his lack of experience:

You quite take my breath away in proposing that I become a candidate for the secretaryship of agriculture. When I tell you that I am not a Republican, I think you will not need any refusal upon my part to allow my name to be mentioned in that connection. The fact is I am a Mugwump with democratic leanings. I voted for Cleveland four years ago and for McKinley this year, and in our last state election voted for the independent candidate. With these political inclinations, you will readily see that I can not expect, as, in fact, I do not hope for, any political honors... Wholly aside from my political disqualifications, I should consider myself lacking in experience to undertake the responsibilities of such a place.³²¹

enthusiastic in the city-to-country idea as some other people are. If it is good for the city to be relieved of some of its population, it does not necessarily follow that it is always good for the country to invite them all. I am in sympathy with a city-to-country movement if it proceeds on rational principles, but am chary of a mere sentimental migration.” Bailey’s country-life movement was not focused on people returning to the land, as modern agriculture techniques made it possible for fewer people to produce enough for all. Instead, it was a program intended to uplift rural America and help citizens gain appreciation for the purpose the farm serves in American culture. L.H. Bailey to W.A. Dyer, 11 August 1910, Liberty Hyde Bailey Papers, 1858-1954, The Division of Rare and Manuscript Collections, Carl A. Kroch Library, Cornell University, Ithaca, NY, Archives 21-2-541, Box 5.

³²⁰ L. H. Bailey, *The Country-Life Movement in the United States* (New York: The Macmillan Company, 1911).

³²¹ L.H. Bailey to C.H. Shinn, 1 December 1896, Liberty Hyde Bailey Papers, 1858-1954, The Division of Rare and Manuscript Collections, Carl A. Kroch Library, Cornell University, Ithaca, NY, Archive 21-2-541, Box 1, Letterbook: February 13, 1896-October 23, 1897.

Rumors would fly for years that Bailey was going to seek that position, but he never did. Bailey did not look to enter into the political arena any more than he would need to in his duties with the College of Agriculture. That was, however, not the last time he was asked to throw his hat into a political race. In 1912 a movement among the leaders of the local Progressive Party issued their desire to enlist Bailey as the Progressive candidate for Governor of New York.³²² Bailey was away in Europe at the time and when he returned he was determined not to enter politics. In 1918, following his retirement from Cornell, his name was once again thrown out as a candidate, this time by the Democratic Party.³²³ His potential nomination was supported by leaders from many cities. Once again, Bailey ignored the request and held firm on his decision to stay out of politics. His nominations demonstrate that he had become well-known and respected on a state and national level. Bailey felt that he could be more effective in his position at the University.

The closest he came to entering the political arena was in 1908 when he agreed to serve as the chairman of President Theodore Roosevelt's Country Life Commission. There was some hesitation on the part of Bailey to serve on the Country Life Commission when the formal request came. He had initially agreed when he was informally requested to serve by Roosevelt; however when the formal request arrived, he turned it down. Shortly thereafter he received a stinging letter

³²² "Want Bailey for Governor," *New York Times*, 9 August 1912, 2.

³²³ "Dr. Bailey for Governor," *New York Times*, 9 February 1918, 9.

from Roosevelt admonishing him for refusing service when he had led him to believe initially that he would; the letter also contained a second plea to join the commission because Bailey was wanted for the position.³²⁴ Bailey's response was a testament to his work ethic; he explained that he did not accept the formal offer because he felt that he could not give proper attention to the work of the Commission because his responsibilities had increased since their initial discussion and he did not want to take on the task if he could not perform it well. Bailey, however, relented and accepted the important appointment. He was joined on the Commission by Henry Wallace, Kenyon L. Butterfield, Walter H. Page, Gifford Pinchot, C.S. Barrett, and W.A. Beard.

The plight of the farmer had gained national attention and the appointment of the Commission was a direct response to this. President Roosevelt recognized that farmers had been shortchanged in the efforts to solve their problems. His goal for the Commission was to travel through rural America and speak to citizens about what could be done to alleviate their troubles and to report this information back to him. The service of the Commission culminated in a final report in 1909.³²⁵ The

³²⁴ President Theodore Roosevelt to L.H. Bailey, 10 August 1908, Liberty Hyde Bailey Papers, 1858-1954, The Division of Rare and Manuscript Collections, Carl A. Kroch Library, Cornell University, Ithaca, NY, Box 4, Folder 2, and L.H. Bailey to President Theodore Roosevelt, 15 August 1908, Liberty Hyde Bailey Papers, 1858-1954, The Division of Rare and Manuscript Collections, Carl A. Kroch Library, Cornell University, Ithaca, NY, Archive 21-2-1400, Box 4, Folder 2.

³²⁵ L. H. Bailey and Theodore Roosevelt, *Report of the Country Life Commission Special Message from the President of the United States Transmitting the Report of the Country Life Commission*, Library of American Civilization (Washington: Government Printing Office, 1909).

underlying message of the report was that reform to rural life should begin with educating farmers, their wives and their children. This, of course, had been Bailey's agenda for the previous quarter of a century.

The Quest for Truth

Bailey was a multifaceted individual who was interested in a variety of different theoretical, practical, and philosophical issues. We get a sense, from the previous section as to the breadth of his interests as an administrator—building a strong agricultural program at Cornell that addressed theoretical and practical issues, his interest in educational reforms, and his efforts at the national level to solve the problems of rural civilization. In this section we will get a sense of the breadth of his scientific interests, again for both theoretical and practical purposes. And in the next chapter we will see how he defined himself, beyond being a scientist, as a poet, philosopher, and an educator. He has been labeled by seemingly disparate terms: scientists and poet, as well as, philosopher and practitioner. He was interested in the growth and development of his students at the university level and the education of the farmers in the field; but he was also interested in the pedagogical issues regarding the education of young children. His wide stance, with both feet planted firmly on opposite sides of the fence, was rare amongst members of the growing professional scientific community. There were those scientists who addressed educational issues in addition to conducting their scientific program; for example, the scientists who

were involved in shaping the *Nature-Study Review*, like David Starr Jordan and John Merle Coulter. Still other scientists were also using their influence to advance the cause of rural life, including his fellow member of the Commission on Country Life, Gifford Pinchot. There were also scientists who addressed larger philosophical issues regarding life in the modern world; again David Starr Jordan comes to mind for his work on militarism and eugenics, and democracy.³²⁶ However, a scientist that was productive in so many different fields of study and who held such a broad outlook on life, were rare, especially due to the restriction imposed by the boundary-building of

³²⁶ In fact, the careers of Bailey and Jordan had many points of similitude. Ironically Jordan graduated from Cornell in 1872 with a M.S. in botany, sixteen years before Bailey arrived on the scene. Jordan was a noted ichthyologist who published still famous scientific treatises on vertebrates, including fish. He wrote several books on evolution and the relationship between it and religion. He was interested in child education and served a vocal participant in the discussion regarding the shape and form of nature study; he also wrote books specifically for children. Like Bailey, he was respected for his administrative skills and Jordan served as the President of Indiana University and Leland Stanford Junior University (later Stanford). And finally, he addressed the philosophical implications of what he viewed as the degeneration of the races and, in the years following the Great War, he became one of the leading scholars on eugenics and war. Due to the range of their work, Bailey and Jordan were rarities among their colleagues in the professional sciences. Included here is a partial list of Jordan's most notable publications, demonstrating his range: David Starr Jordan, *The Book of Knight and Barbara; Being a Series of Stories Told to Children* (New York: D. Appleton and Co., 1899), David Starr Jordan, *The Blood of the Nation; a Study of the Decay of Races through Survival of the Unfit* (Boston: American Unitarian Association, 1902), David Starr Jordan, *War and Waste; a Series of Discussions of War and War Accessories* (Garden City, NY: Doubleday, Page & Co., 1913), David Starr Jordan, *A Book of Natural History*, Young Folks' Library (Boston: University Research Extension Co., 1917), David Starr Jordan, *Democracy and World Relations* (Yonkers-on-Hudson: NY, World Book Co., 1918), 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 Co., 1907), and David Starr Jordan, *Manual of the Vertebrates of the Northern United States: Including the District East of the Mississippi River, and North of North Carolina and Tennessee, Exclusive of Marine Species* (Chicago: Jansen, McClurg & Co., 1876).

the professional sciences. It was Bailey's breadth of knowledge and inclusive outlook that informed his pursuit of truth.

According to Bailey, "[t]ruth only is divine: dogmas and beliefs are human."³²⁷ He was critical of people who clung to religious dogma, especially in the debates over whether evolution occurred in nature, like many of his fellow scientists. He was similarly critical of his fellow scientists who clung to scientific dogma when the facts indicated otherwise. He held that if a scientist's ideas were overturned they should accept the new information and interpretation if the facts demonstrated them to be a better fit than the previous explanation. Scientists should not approach their work as egoists, but as true inquirers into the inner-workings of nature. They should be, ideally, willing to accept or reject theories because they sought truth, and were not dogmatic adherents to a particular theory.³²⁸

Bailey had a scientific agenda to uncover the truths about the natural world. He was also a humanist who looked to nature for truths about humanity and its place in the universe. His voluminous publications and presentations contributed to both the sciences and humanities; again he had each foot firmly planted on two seemingly

³²⁷ Bailey, *The Outlook to Nature*, 271.

³²⁸ *Ibid.*, 238-9. He made a similar plea as part of his speech given in 1919 before the joint meeting of the American Society for Horticultural Science, the Botanical Society of America, and the American Phytopathological Society. The speech was abstracted and published as L. H. Bailey, "The Impartiality of Research," *Proceedings of the American Society for Horticultural Science* 16 (1919): 197-203.

opposite sides of the fence which allowed him a fuller, richer view of the world in which he lived, unhindered by the blinds of dogmatism and subjectivity.

Bailey had great faith in science. In an address at the Ninth Annual Meeting of the Fairchild Garden, given on March 15, 1947, he reminisced about the advances in the sciences he had seen in his lifetime, such as the description of the atom and Pasteur's accurate identification of microscopic organisms. He contended that humans had come to an interesting time in the quest for truth, almost like a new evolutionary stage.³²⁹ In an address before the Central Association of Science and Mathematics Teachers, at Columbus, Ohio on November 30, 1917, Bailey expressed his opinion that: "As we depend on things and phenomena, so is the science of them essential; and what is essential is necessarily educational, if we are to live rationally."³³⁰ Bailey argued that it was essential to have knowledge about the objects and phenomena of the universe, and one form that this knowledge took was science. He did not consider science to be superior to other humanities disciplines, a belief commonly held by science advocates, because its knowledge could be applied to the betterment of human life. He responded to those who felt this way with two responses: First, that science should not be valued simply for its applicability; instead it should be valued because it leads to truth. Second, the humanities fulfill a vital element in the quest for truth and enrich the lives of people as well.³³¹ He also

³²⁹ "Dr. L.H. Bailey Speaks."

³³⁰ Liberty Hyde Bailey, "The Science Element in Education," *School Science and Mathematics* 18, no. 2 (February 1918): 95.

cringed at the implication of the classification of some scientific pursuits as “pure”, leaving all other scientific pursuits to be considered “impure.”³³²

In his Presidential Address before the American Nature Study Society at their annual meeting in 1915, Bailey discussed the science-spirit and the integral role that it played in democratic society.³³³ Bailey remarked that the “quest of science” was to “find the fact and to know the truth.”³³⁴ The truths that science uncovered were valuable in and of themselves; if the truths could further help humanity and society that would be acceptable, but the value of scientific knowledge was not in its applicability.

A scientific inquirer must approach nature with an open mind and avoid dogmatism because the purpose of science was to uncover the truth, without an agenda. A scientist, Bailey told his audience of fellow-scientists at the American Association for the Advancement of Science’s Philadelphia Convocation Week, “has no ulterior motive, no purpose to serve but to uncover the facts; and to know the truth is to the scientists a sufficient reward in life. The ambition of science is to discover,

³³¹ Ibid., 100.

³³² Ibid., 101.

³³³ L. H. Bailey, "The Science-Spirit in a Democracy," *The Nature-Study Review* 12, no. 1 (January 1916): 1-10. The main ideas of this address were later compiled in his publication of L. H. Bailey, *Universal Service, the Hope of Humanity* (New York: Sturgis & Walton Co., 1917).

³³⁴ Bailey, "The Science-Spirit in a Democracy," 1.

to explain, to understand. It does not seek votes or notoriety or special position or money.”³³⁵

The method of science was also objective and democratic. The inquirer was to acquire facts and from this starting point, formulate abstract ideas; the process should not go in the other direction because the ideas may inform the facts and that would not be truthful. And finally, both the method and the knowledge produced was democratic, as science was “free to all men so far as they are able to understand.”³³⁶

Bailey viewed science as a process, with the factual information being secondary. He related his viewpoint in a story before a meeting of the Fairchild Garden; he tells of a woman who approached him and said that she wanted her son to study science because he would have the facts. Bailey replied to the woman: “he will discover some facts or a new law that may be a fact, but what there is behind that the scientist does not know.” To the audience, he advised: “Science is quest for truth, and to be prepared when all your ideas and notions regarding that quest are overturned to make a new investigation just for the truth; for it is the truth that shall make you free.”³³⁷ This is a point he made again and again, as when he advocated that the science-spirit should permeate every human task, including the search for solutions to social problems and issues of governance. If all people approached their

³³⁵ L.H. Bailey, “The Point of View of the Scientist” 1926-27, The Division of Rare and Manuscript Collections, Carl A. Kroch Library, Cornell University, Ithaca, NY, Box 5, Folder 20. He addressed similar themes in Bailey, “The Impartiality of Research.”

³³⁶ Bailey, “The Science-Spirit in a Democracy,” 8.

³³⁷ “Dr. L.H. Bailey Speaks,” 3.

problems with the objectivity of science, sought true answers, and implemented them with only the motivation to solve the problem and make life more rewarding, then the world would be a better place.³³⁸

Despite the questioning of his colleagues when he accepted his first academic position in horticulture, Bailey did achieve a reputation as a good botanist.³³⁹ Many of his publications were written with the express purpose of presenting technical scientific information in a useable, practical manner to farmers, gardeners, and students. He had a command over the botanical and horticultural literature that was far-reaching and he was able to synthesize the scientific evidence in a manner that made it simple and approachable. He also demonstrated his taxonomic and editorial skills in his ambitious six-volume *Standard Cyclopedia of Horticulture* which appealed to both horticulturalists and botanists with its technical descriptions of cultivars. From 1886 to 1905, with the encouragement of both Lucy Millington and Asa Gray, Bailey became the leading world expert on the genus *Carex* (sedges), writing over twenty taxonomic papers on the group. In the twentieth century, he mastered the New World palms and wrote forty-five taxonomic papers on them. He also contributed major taxonomic monographs on the genera *Brassica* (mustards), *Cucurbita* (gourds), and *Rubus* (brambles), and revisions of the genera *Vitis* (grapes) and *Brassica*. The main subjects of Bailey's botanical studies were cultivars or their

³³⁸ Bailey, "The Science-Spirit in a Democracy."

³³⁹ For a brief summary of Bailey's contributions to the science of botany see Lawrence, "Liberty Hyde Bailey, the Botanist." See also Rodger's scientific biography *Liberty Hyde Bailey: At Story of American Plant Sciences*.

non-cultivated relatives and he approached their study as a botanist would study wild plants. He also became a leading expert in plant-breeding, authoring what was widely heralded as the premier book on the subject.³⁴⁰ He published botanical and horticultural articles in such scientific journals as the *Bulletin of the Torrey Botanical Club*, *Journal of Botany*, *Botanical Gazette*, *American Naturalist*, *Annals of the Missouri Botanical Garden*, as well as the journal he founded dedicated to scientific discussions of cultivars, *Gentes Herbarum*. But given his goal of bringing technical information to the public where it could be utilized, he also published countless articles in *American Garden* (later *American Gardening*) and *Garden and Forest*.

The fact that he served as a bridge of knowledge between the scientific and the lay worlds did not diminish his reputation as a scientist. His list of scientific honors was quite extensive and included membership in the American Academy of Arts and Sciences, the National Academy of Sciences, and the American Philosophical Society, among many others. In addition, he served as founder and president for the Botanical Society of America and the American Society of

³⁴⁰ L. H. Bailey, *Plant-Breeding: Being Six Lectures Upon the Amelioration of Domestic Plants* (New York: The Macmillan Company, 1895). In a paper on plant-breeding in the late nineteenth century, Bailey included a reference to the work of Gregor Mendel. This paper led to the rediscovery of Mendel's Laws by Hugo deVries. In a letter to deVries, Bailey wrote that: "It is gratifying to me to know that I had even so small a part in the rediscovery of those remarkable papers." L.H. Bailey to Hugo deVries, 13 October 1902, Liberty Hyde Bailey Papers, 1858-1954, The Division of Rare and Manuscript Collections, Carl A. Kroch Library, Cornell University, Ithaca, NY, Box 1, Letterbook: March 18, 1902-July 20, 1903.

Horticultural Science and president of the American Association for the Advancement of Science and the American Society of Plant Taxonomists.³⁴¹

Bailey gained a reputation as an outstanding science teacher as well. James Rice, a student of Bailey's early in his career at Cornell, recalled that "Dean Bailey had an uncanny penetration in grasping the fundamental principles of a subject."³⁴² His students were eager to learn from the young professor and when he entered the room they immediately focused on him. According to Rice, Bailey was "so full of his subject that frequently he began to lecture before reaching the platform, and held the class spellbound until it was dismissed... Ideas rolled out so fast from Dean Bailey's brain and tongue and we were so interested in what he was saying that we frequently forgot to write down the facts in our notebooks."³⁴³ Students especially appreciated the courses that Bailey taught on pomology, the botany of cultivated plants, and the evolution of cultivated plants.³⁴⁴ Regarding his course on evolution, a former student

³⁴¹ This partial list does not do justice to Bailey's memberships and accomplishments. For a more complete list see the appendices of Verona LaBud, "Liberty Hyde Bailey: His Impact on Science Education" (Ph.D. diss., Syracuse University, 1964). There are also partial lists in Andrew Denny Rodgers, "Liberty Hyde Bailey, Jr.," in *Dictionary of Scientific Biography*, ed. Charles Coulston Gillispie (New York: Charles Scribner's Sons, 1970), and Lawrence, "Liberty Hyde Bailey, the Botanist."

³⁴² James E. Rice, "Early Recollections of Dr. Liberty Hyde Bailey," *Cornell Alumni News*, 1 May 1948, 391-392, 391. Bailey's colleagues at Cornell held a dinner in honor of his ninetieth birthday; Rice, who had become Bailey's colleague when he was appointed to the Poultry Department when Bailey was Dean, submitted his comments in the context of this honor.

³⁴³ *Ibid.*, 391.

³⁴⁴ G. N. Lauman, "L.H. Bailey as a Teacher," *The Cornell Countryman*, December 1913, 74-75.

claimed that it was the “most effective presentation of evolution given in Cornell University and attracted students from all colleges.”³⁴⁵ Bailey would lead the students “from the simple facts of variation to the most profound problems of evolution”³⁴⁶ until they “finished the course with a point of view, not necessarily that of the instructor, giving him a grasp of the conditions in the biological world as few students outside of this course attained.”³⁴⁷ Not only did Bailey tackle evolution in the classroom, but he addressed it in his publications, mainly focusing on the evolution of cultivars and their relatives and philosophical issues.³⁴⁸

In *The Outlook to Nature*, a book in his Rural Outlook Series, Bailey dedicated his fourth chapter to the quest for truth in evolution, a subject which he believed had affected humanity’s outlook toward nature because it is a truthful means

³⁴⁵ Ibid., 74.

³⁴⁶ Ibid.

³⁴⁷ Ibid., 75.

³⁴⁸ L. H. Bailey, *The Survival of the Unlike: A Collection of Evolution Essays Suggested by the Study of Domestic Plants* (New York: The Macmillan Company, 1896), L. H. Bailey, *The Factors of Organic Evolution from a Botanical Standpoint*, Smithsonian Institution. Annual Report; 1897; (Washington: s.n., 1898), and L. H. Bailey, *Sketch of the Evolution of Our Native Fruits* (New York: The Macmillan Company, 1898). He believed that it was an important topic that students needed to be familiar with so he introduced the concept in his *Botany*, which later was reissued and renamed *Botany for Secondary Schools*: L. H. Bailey, *Botany; an Elementary Text for Schools* (New York: The Macmillan Company, 1900), and L. H. Bailey, *Botany for Secondary Schools: A Guide to the Knowledge of the Vegetation of the Neighborhood* (New York: The Macmillan Company, 1913). Bailey also addressed evolutionary issues in a number of articles from both a practical and philosophical standpoint; one of the most noted was L. H. Bailey, "An Evolutionist's View of Nature and Religion," *The Independent* 51, no. 2618 (February 1899): 335-339.

of understanding how the natural world worked.³⁴⁹ Bailey was surprised to see that evolution was, once again in the early 1900s, a topic of conversation, this time at a Bible League Convention. He assumed that the debate between evolution and theology was over and that most people judged the theory on its own evidence, rather than relying on religious dogma.³⁵⁰ Those who objected to evolution either did not know the facts or were not familiar with the theory, according to Bailey. Disbelievers of evolution did not approach the theory as a scientific idea, but as a challenge to a traditional religious story. Evolution, Bailey claimed, “stands for the quest of truth as distinguished from adherence to dogma. It affirms that the origin of the forms of life is a natural phenomenon and is governed by law. Evolution has set the face directly

³⁴⁹ Bailey, *The Outlook to Nature*. The book contains four lectures on what Bailey considered to be important issues with regard to human interaction with the natural world. The topics covered in these four lectures encompass four areas of supreme importance in Bailey’s philosophical outlook, including: a plea for a return to simplicity in life and familiarity with the commonplace; the mutual importance of the country in relation to the city and vice versa; the need for practical education that will meet the needs, both practically and pedagogically, of children in changing times; and, finally, the importance of seeking truth in nature, rather than relying on dogma, to supply a realistic outlook on how nature works. All of these philosophical threads in this book are woven into his nature-study philosophy and practice.

³⁵⁰ The tension between evolution and religion has been well documented: Frederick Gregory, "The Impact of Darwinian Evolution on Protestant Theology in the Nineteenth Century," in *God & Nature: Historical Essays on the Encounter between Christianity and Science*, eds. David C. Lindberg and Ronald L. Numbers (Berkeley: University of California Press, 1986), Edward J. Larson, *Summer for the Gods: The Scopes Trial and America's Continuing Debate over Science and Religion* (New York: BasicBooks, 1997), Ronald L. Numbers, *Darwinism Comes to America* (Cambridge.: Harvard University Press, 1998), and Jon H. Roberts, *Darwinism and the Divine in America: Protestant Intellectuals and Organic Evolution, 1859-1900* (Notre Dame, Ind.: University of Notre Dame Press, 2001).

toward truth regardless of the consequences; and the outlook to truth in what we call the natural world is the outlook to courage, to the future, and to hope.”³⁵¹ Instead of evaluating the factual evidence, those who were skeptical of evolutionary theory, instead, wanted to further dogmatic religious beliefs. Bailey believed he was taking the side of truth and not arguing from dogmatic religious *or* scientific arguments in his argument for evolution.

According to Bailey, scientific evidence confirmed that evolution had occurred. One piece of evidence that he cited was the fact that the world was not big enough to contain all of the possible progeny of plants and animals; therefore, there must be a struggle for survival, and this struggle caused organisms to evolve or die. He also cited evidence that there had been grand physical changes in the earth that may have affected species.³⁵² There was no evidence that could, according to Bailey, completely disprove evolution.

Bailey realized that the main problem that people had with evolution was the idea that humans were descended from a monkey. This supposed relationship implied that humans were not God’s special creation, but simply a part of the changing animal world. He answered these confused individuals by explaining that “the two came off a single stem in ages past, and they now represent the tips of the branches of a letter Y; but I like to think that the human branch is a little longer than the monkey

³⁵¹ Bailey, *The Outlook to Nature*, 233.

³⁵² *Ibid.*, 258-259.

branch.”³⁵³ For Bailey, the fact that some humans were speculating about evolution and were willing to accept it as an explanation for change “marks one of the great epochs in the evolution of the race” because humans had reached a point where they were capable of grasping the complexity of the world in which they lived. No longer were humans simply collecting facts, but they were moving beyond this activity to the discovery of the meaning of the facts.

Bailey, a Christian himself, addressed the religious implication of evolution in an article in the *Independent* entitled “An Evolutionist’s View of Nature and Religion.”³⁵⁴ He came to the conclusion that religion and evolution were not antithetical belief systems. In fact, Bailey argued that one can reconcile creation by God and evolution: he claimed “it is a marvelous thing that the most advanced teaching of evolution should so fully confirm the sequence of Genesis.”³⁵⁵ People who sought to discredit evolution are making claims based on belief and are ignoring the evidence, which is not appropriate when discussing ones outlook to nature. Religion, in his opinion, should evolve and adapt to incorporate new information, so as to avoid dogmatism. In this sense he followed in the footsteps of his mentor, Asa Gray. Gray reconciled evolution and religion by arguing that God established the law of nature in order to serve a higher purpose. Thus, nature works according to natural laws, but God provides direction by creating these laws and setting them into motion.

³⁵³ Ibid., 258.

³⁵⁴ Bailey, "An Evolutionist's View of Nature and Religion," 337.

³⁵⁵ Ibid.

Bailey also believed that there was purpose in nature, but like his mentor, he rejected the “idea of a creator interfering in his creation, and constantly reinforcing and mending it.”³⁵⁶ According to Bailey, God was not a “mechanic,” who tinkered with his creation. He went on further to argue that if “the cosmos is a design, it must follow, of course, that there is design in its parts; but the design in the parts is the unfolding of the law of design, not special interference in particulars.”³⁵⁷ In other words, if God did play a part in the creation of the universe, it is through the creation of laws to regulate it. And if God had a hand in evolution, it is by creating the laws that dictate change.

In his discussion of evolution, he tells the story of a strawberry plant that he was sent from Oregon; two years after he had planted it in New York the plant no longer had “the distinguishing ancestral marks” of the plant he brought back.³⁵⁸ In fact, he believed that perhaps it had changed into a new species. He shared this news with a friend who balked at the idea that Bailey, a mortal, had created a new species, when this was the role of God, according to orthodox theology, which did not allow for the appearance of more species than those that were in existence at the time of creation. Bailey argued that there could be more species that existed in the present than there had been at the time of creation. He proposed that perhaps his discovery

³⁵⁶ Bailey, *The Outlook to Nature*, 285.

³⁵⁷ Ibid.

³⁵⁸ Ibid., 246.

might have been more accepted had he used the word “kind”, rather than “species”.³⁵⁹ The term “species” was of no other value to Bailey except to know what to call an organism, but the word is not based upon “intrinsic characters”.³⁶⁰ The determination of an organism as a “species” was a judgment call because the organism may simply represent an intermediate form, rather than a distinct species. The problem that Bailey encountered with his friend over the strawberry plant also arose because people who had difficulty with the concept of evolution believed that species were distinct entities created by God, and, that therefore, there must be some intrinsic character to them because God created them differently than others. When Bailey argued to his friend that he had produced a new species, his friend’s first objection was likely to the idea that the intrinsic character of God’s creation could be changed. The second objection was likely that a mere human was claiming to have done this by transplanting the strawberry from Oregon to New York.

Bailey’s ambivalence about the “species” concept came out in different ways as well. Also in the *Outlook to Nature*, two years following the core of the nature-faker controversy, Bailey offered an interesting analysis of the debate. This time he

³⁵⁹ Ibid., 246-252.

³⁶⁰ Ibid., 253. Bailey liked to think of species in terms of providing a “genealogy” of a plant. In other words, the species was not the end-point of change, but represented points along a continuum of change where the plant looked significantly different from the former incarnation; thus, leading to his belief that there is nothing “essential” in species. Bailey reflects the concept of species that was used from Darwin’s time that indicated that species were defined by morphological variation, but he breaks from Darwin in his belief that species are not real entities. Peter J. Bowler, *Evolution: The History of an Idea* (Berkeley: University of California Press, 1989).

went on the attack against scientists by asserting that they had too rigidly tried to confine nature into a neatly ordered system, and it didn't always work. Further, when someone offered an alternative method of defining nature, scientific adherents balked. Bailey, in his characteristic fashion, believed that there were multiple perspectives and approaches that needed to be considered, rather than the display of a blind adherence to nature. He wrote:

In the natural history domain we are rapidly emancipating ourselves from the dogma of "species". This is well attested by the recent theories of De Vries; for the very essence of his contention is that differences between organisms must be measured by their qualities, not by their names. In the popular realm it is attested by the great attention that we are giving to individual animals as personalities rather than to species and groups. We are asked to consider the habits and history of one individual crow, for example, and we may name him Silver Spot rather than *Corvus Americanus*. The Burroughs-Long controversy, aside from its incidents and its disputes as to matters of fact, brings up the deeper question as to how far particular animals have strong individual traits that are not common to the species as a whole. In fiction and narrative, this question expresses itself in the making of an animal the "hero" of the story, as in "Black Beauty" and "The Call of the Wild."³⁶¹

Bailey demonstrated awareness of a growing trend amongst nature writers to make animals the central focus of literature and to make more familiar to readers by giving them names and, in some cases, human characteristics. Bailey doesn't participate in this trend, but he does find value in it, as long as it is based in fact. This method was decried, however, by other scientists and science supporters who considered this approach to be unscientific and amateurish. Because the writer would focus on the individual, rather than the species, their observations became less objective.

³⁶¹ Bailey, *The Outlook to Nature*, 267.

However, Bailey argued that knowledge of an individual organism was natural, especially for young boys who spent any time in nature. He goes on to say:

Strangely enough, all this is the natural way of knowing the out-of-doors. It is the way that the boy and the hunter know it. The boy knows what the squirrel does day by day,--where it lives, when it goes and comes, what it eats, what it says. He knows the fields and the woods and the fishing-hole, without knowing that he knows them. If we could have the intimate unconscious boy kind of knowledge put into books, it would almost make a new natural history. It would give us the life-story of the animal or the plant the whole year round. Such an author would give us the animal squirrel, not the species squirrel. This kind of knowledge is not yet in books to any great extent. Consult your authorities, and see how little explicit knowledge you find in them. I have long since ceased to consult the books that I have written. One reason why the nature-studies are so difficult to establish is because there are almost no books to serve as guides to the intimate and particular life histories. We need a new type of monographs, written directly from the field, without reference to the museums or to the kind of information that we have read about.”³⁶²

Bailey legitimized the knowledge that young boys and girls collected as they explored the neighboring fields and forests, much like he would have done as a young boy.

Scientists were most comfortable focusing on species-level descriptions, as it was assured that the observations were universal and there was less chance that they were tainted by subjectivity. When the focus shifted to the individual, the distance between the observer and the subject broke down. Bailey did not see a problem with this, as long as it was within reason and not oversentimentalized. In his characteristic fashion, Bailey once again broke down the barrier between the professional scientist and the amateur observer.

In fact, Bailey went so far as to advocate a new natural history based upon the knowledge that the everyday observer gains about nature, including what an

³⁶² Ibid.

individual organism eats, where it lives and what it does. He was calling for individual life stories or life histories of specific animals and plants. He advocated providing more of this type of knowledge in books about the natural world because it would be more useful and accurate. This knowledge would need to be collected first-hand in the field and would move the natural historian away from the inanimate specimens in the museums. Significantly, this knowledge need not be collected by the trained professional but could be also collected by youth in nature. Throughout his career Bailey had been a critic of blind adherence to dogma when it came to scientific theories, but he also rejected as dogma the idea that legitimate knowledge was solely the domain of the professional scientist. Bailey provided an added dimension to this seemingly black and white debate in which people took one side or the other. He offered a more complex outlook to the natural world that was informed by both a scientific and a fanciful approach.

Bailey held that the problems that the modern world was facing could not be solved by a monolithic approach. Science alone was not the savior of American culture; neither was art or philosophy. Instead the modern citizen must have a multiplicity of approaches to begin resolving the issues American's were facing. He also contended that while adults were the primary agents of change, the next generation must be trained to take up the task. It made the most sense, to Bailey, to provide the caretakers of the future of American civilization with an assortment of tools.

“Fact Is Not to Be Worshipped”

The nature-study movement, for Bailey, was a reaction to what he called “dry-as-dust science teaching” with the goal of bringing children into sympathy with the natural world.³⁶³ The sympathetic and emotional connection between a child and nature should be nurtured during their youth so that they have as the foundation of their natural knowledge inquisitiveness about and a love for nature that will accompany them into their adulthood. Nature-study, in the form he was advocating, was part of a larger social vision for Bailey. As I discussed earlier, Bailey believed that a connection to the land was a necessary foundation for modern society; but modern society was fleeing the farm. In order to reverse, or at least slow, this flow of people from rural areas, Bailey wanted to bring humans closer to nature through nature study and this change, like many changes during the Progressive era, began with children. But it was not just about revitalizing rural life for Bailey; a fundamental balance between an agrarian and industrial life must be sustained in order to make the earth a healthy place to live and to keep its inhabitants in perfect harmony. Thus, Bailey believed that if a child was taught to love nature they would maintain this ecological balance by either remaining on the farm or, if they chose city life, at least understanding the importance of rural life to the health of the planet and its people.

³⁶³ Ibid.

“The Holy Earth”

The ultimate practical task, the one that consumed much of his later career and life, was reviving rural civilization. Bailey was concerned about the transition from a traditionally rural and agrarian culture to an industrial culture that was occurring in America before his eyes and which spanned his lifetime—the post Civil War era through the Gilded Age and the Progressive era. The end product of this transition seemed to be the abandonment of rural land and values such as reverence for the earth and a close bond to the land. This was not acceptable for Bailey who believed that the land and the people who cultivated it were the foundation of society. Bailey’s focus on rural issues was part of his larger concern for the direction of the American “national character.” He accepted the premise that American values were essentially rooted in their dependence on the land and their early interactions with nature. Thus, if there were problems in rural America, these were symptomatic of larger problems in American culture. In one of his most important philosophical works, *The Holy Earth*, part of his Background Books set, Bailey argued that farming represented a distinct stage in human evolution and that the resulting character that it produces should be adopted by the nation:

Finally, we begin to enter the productive stage, whereby we secure supplies by controlling the conditions under which they grow, wasting little, harming not. Farming has been very much a mining process, the utilizing of fertility easily at hand and the moving-on to lands unspoiled of quick potash and nitrogen. Now it begins to be really productive and constructive, with a range of responsible and permanent morals. We rear the domestic animals with precision. We raise crops, when we will, almost to a nicety. We plant fish in lakes and streams to some extent but chiefly to provide more game rather than more human food, for in this range we are yet mostly in the

collecting and hunter stage. If the older stages were strongly expressed in the character of the people, so will this new stage be expressed; and so is it that we are escaping the primitive and should be coming into a new character. We shall find our rootage in the soil.

This new character, this clearer sense of relationship with the earth, should express itself in all the people and not exclusively in farming people and their like. It should be a popular character—or a national character if we would limit the discussion to one people—and not a class character. Now herein lies a difficulty and here is a reason for writing this book: the population of the earth is increasing, the relative population of farmers is decreasing, people are herding in cities, we have a city mind, and relatively fewer people are brought into touch with the earth in any real way. So is it incumbent on us to take special pains—now that we see the new time—that all the people, or as many of them as possible, shall have contact with the earth and that the earth righteousness shall be abundantly taught.³⁶⁴

The problem, according to Bailey, was that humans took the earth for granted because it had always provided. As a result, humans did not actively consider their relationship to the earth. Because humans were a participating part of the “cosmos” they had a responsibility to the earth, indeed humans had a personal obligation to the earth that extended beyond mere morality. On the human relationship with nature, Bailey argued that the “planet must be raised to the realm of spirit” in order for the relationship to be useful.³⁶⁵ Humans must understand that they, along with the earth, were products of God’s creation.

In order for this understanding to develop Bailey advocated cultivating an emotional attachment to the earth which he acknowledged was increasingly difficult in an increasingly urban world. Bailey lamented the fact that the world was becoming increasingly commercial, creating the hazardous opportunity for people to

³⁶⁴ L. H. Bailey, *The Holy Earth* (New York: C. Scribner's Sons, 1915), 22-24.

³⁶⁵ *Ibid.*, 3.

attach themselves to the artifice representing this new civilization. The result would be detachment from what Bailey called “the everlasting background”, or nature.³⁶⁶ Bailey spoke of this detachment in deliberately religious terms, lamenting that “Our religion is detached,” as humans came to worship man-made idols or the material goods so rampant in the industrial age.³⁶⁷ For Bailey, one of the key links that humans needed to make in order to save rural civilization and the national character it nurtured was a reconnections with the earth and the adoption of an attitude of reverence toward it.

Bailey recognized the right of human dominion over the materials of the earth and argued that this might derive from the fact that humans come from that same earth.³⁶⁸ But when humans put too great an emphasis on man-made materials, they

³⁶⁶ Ibid.

³⁶⁷ Ibid.

³⁶⁸ Bailey scholars Paul Morgan and John Azelvandre, both philosophers of education, investigate Bailey’s influence on environmental education and trace Bailey’s life and his philosophical works and how they shaped his ecological philosophy, but they disagree on how to characterize this philosophy. Morgan concludes that Bailey supplied an ecological philosophy that was biocentric and holistic, and while Azelvandre agrees that this is true, he contends that these descriptors do not wholly characterize it. He argues that Bailey also supported a model that was anthropocentric and in which organisms are not valued for themselves, but for their contributions to human welfare. Bailey argued that people had a moral responsibility to the earth and that, in return, because of the relationship humans cultivated with the earth, they would be replenished by the earth. Azelvandre contends that Bailey recognized how the earth could soothe the soul of the observer and thus, the observer could benefit from it. As the passages above from *The Holy Earth* demonstrate, humans do benefit from nature, not only materially, but also spiritually. As a result, I believe that Azelvandre’s analysis is the more accurate. For Bailey humans and nature were deeply interconnected, so this negated the belief that nature had value in its own right. He also realized that his audiences, especially

failed to recognize the true nature of their relationship to the earth. According to Bailey, there would be “no danger of crass materialism if we recognize the original materials as divine and if we understand our proper relation to the creation.”³⁶⁹ Since humans were of the materials of the earth, humans and the earth had an interconnected bond. The deep nature of the relationship ensured that humans would care for the materials of the earth and not abuse them. While humans were desirous of human made items, products of the industrial age, these items shared little connection to humans and they would not receive the same abiding respect that humanity held for the materials themselves of the earth.

Bailey issued the following plea: “We must find a way to maintain the emotions in the abounding commercial civilization.”³⁷⁰ Despite Bailey’s identification of the need for more emotion, achieving this goal didn’t automatically downgrade the importance of reason. A balance between the two was essential and science was a necessary tool. He wrote:

Nor does this close regard for the mother earth imply any loss of mysticism or of exaltation: quite the contrary. Science but increases the mystery of the unknown and enlarges the boundaries of the spiritual vision. To feel that one is useful and co-operating part in nature is to give one kinship, and to open the

farmers who make their living from the earth, were more likely to answer his plea for responsible stewardship if they gained in terms of material and spiritual benefits. John P. Azelvandre, “Forging the Bonds of Sympathy: Spirituality, Individualism and Empiricism in the Ecological Thought of Liberty Hyde Bailey and Its Implications for Environmental Education” (Ph.D. diss., New York University, 2001) and Paul Morgan, “Liberty Hyde Bailey: Pioneer and Prophet of an Ecological Philosophy of Education” (Ph.D. diss., Columbia University, 1998).

³⁶⁹ Bailey, *The Holy Earth*, 3.

³⁷⁰ *Ibid.*, 2.

mind to the great resources and the high enthusiasms. Here arises also the great emotion and conceptions of sublimity and grandeur, of majesty and awe, the uplift of vast desires,--one contemplates the earth and the universe and desires to take them into the soul and to express oneself in their terms; and here also the responsible practices of life take root.³⁷¹

Science can answer the question one poses about nature through a rational search.

But Bailey also held that the knowledge gained from science could elucidate the relationships that humans have with nature and the complex beauty of the natural world. This knowledge gained from scientific inquiry could lead to spiritual insight and the awakening of an emotional connection. And the feelings of sympathy could naturally lead one into the role of caretaker of the earth, rather than its abuser.

How do humans reconnect with the natural world? Bailey believed that people needed to be made aware of the beauty and awe in nature; and he sought to do this through his poetry and philosophical books on the holy earth. In his philosophical work, *The Outlook to Nature*, Bailey claimed:

I preach the things that we ourselves did not make; for we are all idolaters,--the things of our hands we worship. I preach the near-at-hand, however plain and ordinary,--the sky in rain and sun; the bird on its nest and the nest on its bough; the rough bark of trees; the frost on bare thin twigs; the mouse skittering to its burrow; the insect seeking its crevice; the smell of the ground; the sweet wind; the leaf that clings to its twig or that falls when its work is done. Wisdom flows from these as it can never flow from libraries and laboratories.³⁷²

Bailey's choice of the words "preach" and "worship" are very important here; he used the language of religion because he believed that both nature and civilization evoked

³⁷¹ Ibid., 3-4.

³⁷² Bailey, *The Outlook to Nature*, 11.

deep, emotional responses. People who worshiped the products of civilization were idolaters because they did not worship God directly; but Bailey believed that God was found in nature and those who worshiped nature revered God directly. Therefore, he preached a gospel of attending to those objects and phenomena in nature because through an understanding of these objects, one began to understand God. And while he did appreciate nature on an intellectual level, he held that the spiritual knowledge that nature provided was equally valuable. A balance between the two was the ultimate goal.

Further, humans could reconnect with the natural world by realizing their place as fellow-kin to the organisms of the earth; reverence came from a realization that humans were part of nature. Bailey equated humans and animals because they both are governed by natural law; but because humans were unable or unwilling to think objectively about themselves, they failed to realize the parallelism.³⁷³

Humans, according to Bailey, were but one of God's many creations, and thus an anthropocentric approach would be inappropriate. However, Bailey did allow humans dominion over the things of the earth because God had granted it to them, given that they are made in the image of the Creator. The Bible commands humans to "subdue" the earth and grants them "dominion over the fish of the sea, and over the

³⁷³ Liberty Hyde Bailey, "Humanistic Elements in Education," *The Nature-Study Review* 14, no. 2 (December 1918): 43-47, 44. This was originally a Presidential Address at the Annual Meeting of the American Nature-Study Society. Bailey argued further that humans, because they are more self-aware and cunning quickly came to dominate the animal world. Humans developed the skills to survive, and having mastered them, developed skills to make their lives fuller and richer, through literature and art. Finally, humans began thinking about the larger questions about the universe and inquiring into the mechanisms of nature, thus, giving rise to science.

fowl of the air, and over every living thing that moveth upon the earth.”³⁷⁴ In Bailey’s exegesis, this dominion gave to humans the obligation to “react and to partake, to keep, to cherish, and to co-operate.”³⁷⁵ Typically, because the earth is an inanimate object and humans assumed that they had no obligation toward inanimate objects, they abused their responsibility. The gap between the inanimate earth and animate humans, however, was constantly being decreased by science. Bailey rejected the puritanical attitude toward nature as something to fear—strongly advocating that as humans were a product of nature they therefore should feel a kinship with it. Despite the fact that nature wielded powerful forces, it was also “kindly”. Humans should look to nature with “sympathy” and try to understand it, treating their dominion as a form of morality toward the earth. For example, dominion does not equal ownership, but merely a right to safeguard resources for all generations of humans. But the history of human dominion had instead been destructive and Bailey linked this destruction with modern society’s obsession with trade and commercialization. Bailey concluded:

If God created the earth, so is the earth hallowed; and if it is hallowed, so must we deal with it devotedly and with care that we do not despoil it, and mindful of our relations to all beings that live on it. We are to consider it religiously: Put off thy shoes from off thy feet, for the place wheron thou standest is holy ground.³⁷⁶

³⁷⁴ Bailey, *The Holy Earth*, 6.

³⁷⁵ Ibid.

³⁷⁶ Ibid., 14.

Saving rural civilization and the natural foundation on which it is built depended on the realization that nature, along with man, suffered the consequences of Adam's sin; the redemption of nature was linked with the redemption of humans.

Bailey hoped that humanity would not sacrifice their Eden, but instead would redeem themselves and prove themselves worthy of stewardship of the land. He believed that the solution was to focus on the next generation and to radically restructure their outlook on nature and humanity's relationship to it. This could best be accomplished through education and the schools because a larger number of children could be reached. Bailey advocated a remodeled schoolhouse and curriculum which allowed students more interaction with nature, as well as increased flexibility regarding their interactions. Nature-study provided the means for a student to develop a spiritual and emotional connection to the natural world in a way that a strict science education could not.

“The School of the Future”

In *The Struggle for the Curriculum*, Herbert Kliebard points to the changing world of the late nineteenth and early twentieth century as the source of curricular tumult. The United States was changing in ways that were unprecedented and Americans were preoccupied with navigating this changing world. Many believed that the old system of learning did not prepare students for modern life. Vocational education became the means for encouraging the forging of direct relations between school and life. Proponents of vocational education sought to make the school

pertinent to modern life. There were two camps in vocational education: industrial education in the city schools and vocational agriculture for rural schools. The purpose of the first was to train a workforce to meet the new demands of urban-industrial life. The purpose of the latter was to train farmers for their continued work on the farm, but also to help preserve the values and practices of rural America. Bailey fell into the latter camp.³⁷⁷

Fundamental to all of the curricular reform movements was a belief that the traditional system of education, based on rote memorization and a focus on classical studies, was outmoded. In his third chapter of the *Outlook to Nature*, about “The School of the Future,” Bailey told of a little girl who responded to the request to define what an “educated man” was and she responded that it was a man that did not work.³⁷⁸ He pointed out that this was indicative of the popular belief that education does not prepare one for their livelihood. Bailey rejected the idea that training in the practical arts would not lead to a well educated man. He claimed:

Many of the old subjects train the memory chiefly and their results are superficial. ‘Reasoning power’ develops by use. This power ought to be as effectively used by reasoning from problem to solutions in biology or physics or agriculture or engineering as in formal philosophy and logic. A man can be trained to think just as accurately by means even of agricultural subjects as by conventional subjects, provided the agricultural subjects are as well systematized and unified and equally well taught.³⁷⁹

³⁷⁷ Kliebard, *The Struggle for the American Curriculum*. Federally-funded vocational education began in 1917 with the passage of the Smith-Hughes Act. Bailey’s support of agricultural education preceded federal funding.

³⁷⁸ Bailey, *The Outlook to Nature*.

³⁷⁹ *Ibid.*, 147.

A classic education did not prepare students for work in the real world. Yet, those with this brand of education claimed superiority over those with a practical education. Bailey was firm in his belief that an educated man “must not stand above and aloof from mankind.”³⁸⁰ Instead, those with the benefit of an education were obligated to serve their fellow citizens. Bailey stood as a model of this service.

Bailey preached the growing importance of the country school. These schools had been left behind in terms of curriculum and facilities and they had not evolved to meet the needs of rural children in a modern world. The subjects that students learned had been transplanted from city schools and were not a product of a well-thought out plan on what to teach rural children. The focus on the curriculum was classical, encompassing all the standard school subjects like reading, writing and arithmetic. This old-style education, according to Bailey, did little more than train the mind of the child. Instead of automatons capable of regurgitating factual information, Bailey wanted future rural citizens who were capable of solving the problems unique to rural life. This required being educated about one’s surroundings.

Bailey called for reform of the curriculum of the rural schools along two principal lines: first, the education that rural children received should be based upon actual experience; and second, the focus should reflect the needs of the rural community.³⁸¹ As a result, education would be more “active” in the sense that

³⁸⁰ Ibid., 148.

³⁸¹ L. H. Bailey, "The Common Schools and the Farm-Youth," *The Century Magazine*, October 1907, 960-967.

students would vigorously investigate their surroundings. One way to accomplish these goals in the rural schools was to incorporate agricultural subjects into the curriculum.

“Experience teaching,” as Bailey called it, was a burgeoning trend in American education with the adoption of kindergarten, manual training, and even Louis Agassiz’ “Study nature, not books” philosophy of natural history.³⁸² Active learning was fast becoming the norm, replacing education that required a student to sit behind a desk and recite mere information. Bailey wanted hands-on experience to guide the methods of rural schools because it was a more natural mode of learning for children. He expressed his view on how children learn in his poem the “Child’s Realm”³⁸³:

A little child sat on the sloping strand
Gazing at the flow and the free,
Thrusting its feet into the golden sand,
Playing with the waves and the sea.

I snatched a weed and tossed on the flood
And unraveled its tangled skeins;
And I traced the course of the fertile blood
That lay deep in its meshed veins;

I told how the stars are garnered in space,
How the moon on its course is rolled;
How the earth is hung in its ceaseless place
As it whirls in its orbit old.

³⁸² Ibid.

³⁸³ L. H. Bailey, *Wind and Weather*, The Background Books (New York: C. Scribner’s Sons, 1916), 119.

The little child paused with its busy hands
And gazed for a moment at me;
Then it dropped again to its golden sands
And played with the waves and the sea.

The above poem demonstrates his recognition that children were interested in what they see and touch more than what they are told. In addition, the child in the poem was not ready to hear about the intricacies and delicate nature of the planetary system, but was more interested in discovering the seaside on their own. These principles influenced his educational philosophy.

The rural school, according to Bailey, had a social responsibility to relate itself to the outlook and needs of the people.³⁸⁴ He believed that rural students should know about basic community interrelations, including: "the people of his community, and how they live; how the community supports itself; its relation to the neighboring community; how many schools there are and how many churches and how they came to be there; the roads; the general lay of the land, and something about the soil; how many farms in the district, and what they produced and why; the common or significant animals and plants; the woods in the stream; how the locality is governed; how the houses are built; what the local factories are; and so on."³⁸⁵ This knowledge would prepare the student to be a productive and efficient member of the community and that was more important than the subjects of a classic education according to Bailey.

³⁸⁴ L. H. Bailey, *The Training of Farmers* (New York: Century, 1909), 139.

³⁸⁵ *Ibid.*, 151-152.

Bailey coined this new educational approach in the rural schools “industrial education” and defined it as follows:

an education that uses the native objects and affairs of the community as a means of training in scholarship, setting the youth right toward life, making him to feel that schooling is as indigenous and natural as any other part of his life, that he cannot afford to neglect schooling any more than he can neglect the learning of a business or occupation, that schooling will aid him directly in his occupation, that the home and school and daily work are only different phases of his own normal development, and that common duties may be made worthy of his ideals.³⁸⁶

Bailey’s choice of terminology is perplexing as it could easily be confused with the traditional sense of industrial education, or manual training for work in an industrial arena. Bailey considered using the term “nature-study” to describe this educational method because he believed the term should be applied to the “natural method of education where a pupil is educated based on the world they live in,” but unfortunately the term had long been associated with study of the natural world alone and Bailey’s sense of “industrial education” went beyond simply knowing about nature.³⁸⁷ Instead Bailey argued that the meaning of the term “industrial education” should be extended beyond the accepted association with manual and technical education to mean “true education in aiding mental development, supplying usable information, affording manual and physical training, developing sympathy with the work of the world, arousing enthusiasm for service.”³⁸⁸ Bailey contended that “industrial education” would bring creativity and enthusiasm back into education

³⁸⁶ Bailey, *The Outlook to Nature*, 181-182.

³⁸⁷ *Ibid.*, 183.

³⁸⁸ *Ibid.*, 184.

because it allowed a student to deal with problems in the real world, and books and classroom learning cannot provide that kind of experience.

As was common for Bailey, he published his philosophy in multiple forms. He wrote on different aspects of his rural education reform in prose for popular books and magazines, and also in the more specialized agricultural literature. This breadth allowed him to spread his ideas to as many people as possible, which was essential if change were to occur. It was also integral to Bailey's stance that education and information were democratic and hence should be available to anyone regardless of class, race, or educational level. He also published his philosophy on educational reform in a poem, "The School of the Future".³⁸⁹

THE SCHOOL OF THE FUTURE

There's a farm on a hillside,
 A mill on the river;
There's a store on the highway,
 A mine on the mountain;
There's a shop on the lowland,
 A ship on the ocean.

There's a man with his reaper,
 A man with his dinner;
There's a man with his shovel,
 A man with his measure;
There's a man with his tool-box,
 A man with his canvas.

There's a home with its comfort,
 A street with its goers;
There's a club with its actors,
 A hall with its speakers;
There's a church with its people,

³⁸⁹ The poem was published originally in *The Outlook to Nature*.

A school with its learners.

These all are God's agents.
Relentless and ceaseless
In workshop and homespun
They weave the Great Fabric.
They are builders of nations
They are makers of Heaven
As the race in its progress,
So the child in its nurture
And the flight of the poet
Come up out of Labor.
Constructive, creative
Will the method of nature
Of life and its content
Make the school of the Future.

It is clear that all of these institutions that one might encounter as they walk through their community, like the church, home, and store, and the people of various occupations, like farmers and painters, are educational tools in the school of the future. The student could learn something about life, especially life in their community, from each of these sources. All aspects of a person's surroundings should be mastered so that the pupil may live a more "constructive" and "creative" life.

There had been some headway made on school reform thanks to the Progressive educational movement and Bailey was pleased to see that the schools were starting to teach the things that he believed people needed to learn. He praised the use of the scientific method, hands-on experiences and study, and the emphasis on solving actual problems. The scientific method had also shifted the center of attention to real objects that became the focus of study. This idea had given rise to the laboratory method, where students gained information through hands-on

experience. Bailey also praised object lessons and manual training for their stress on experience

Despite the changes already afoot, there were obstacles. To implement his reforms, Bailey had to fight more traditional attitudes regarding education. Many believed that the standard form of education, based upon the study of the classics, led to a cultured individual; Bailey did not dispute this, but he was troubled by the underlying assumption that any other type of education did not produce a cultured individual. He argued that being cultured meant more than having good manners, for a cultured individual must instead possess the following traits: “breadth of view, clear reasoning power, good judgment, tolerance, high ideals, sensitiveness to art and nature, devotion to service.”³⁹⁰ He believed that an agricultural education could provide a quality education, of the same caliber as a classical education, if the subjects were presented in a systematic and unified way. He also had to fight the assumption that farmers were not intellectual because their work was so laborious. Bailey disagreed; he argued that farmers used their intellect to solve practical problems of the farm on a daily basis. Further, Bailey believed that those subjects, like agriculture courses, that are not an accepted part of a liberal education, should not be considered antithetical to a quality, liberal education; instead, a liberalized education is one that puts the person into sympathy with the activities and ideals of their fellow humans.³⁹¹

³⁹⁰ Ibid., 144-145.

³⁹¹ Ibid., 150-151.

Nature-study was an extension of Bailey's industrial education reform. It shared many of the same principles and end-goals. The focus was on rural, agricultural life and grade-school age children. He believed that civilization stunted youth, but life on the farm allowed children time to grow and develop more slowly than life in the city did because of the unhurried surroundings of the farm child.³⁹² Modern civilization, because it was so complex and taxing, made people "mentally old" before they became physically old. He feared that civilization was pulling children away from the natural spontaneity and joy of childhood. He also feared that it was dulling children's attitudes toward nature. However, youth were inherently more nature-oriented and Bailey believed that it was important to teach children at a young age to love and respect it. The home and school had failed to nurture the youthful life, but had instead repressed it. In order to reverse this trend, the school should orient its curriculum more directly to the needs of children.

"The Nature-Study Idea"

Bailey's educational reform for rural schoolchildren took the form of nature-study. In his overall scheme of industrial education, this was the form that was most appropriate to rural children because while the purpose of industrial education was to educate children about their surroundings in order to make them productive members

³⁹² Bailey, *The Outlook to Nature*, 166.

of society, a focus on nature, the land, and the soil seemed most appropriate for farm kids. However, Bailey did not believe that rural schoolchildren were the only ones who could benefit from the program. His program at Cornell, as well as the *Nature-Study Review*, and the associate organization, the American Nature Study Society, addressed issues beyond those faced by rural children. Rural children were an easy group with which to initiate nature-study due to the fact that the subject of study was in their own back yards; further, it made sense to initiate a program for rural schoolchildren in order to keep them on the farm so their bond with nature would remain strong, or, if they did move to the city, to form a solid respect for nature. But all children deserved to participate in the nature study program.

Bailey's written contributions to the nature-study curriculum were meant to address the need of rural schoolteachers as well as urban teachers. He authored several leaflets, home correspondence course lesson plans, articles for the *Nature-Study Review*, while teaching summer and regular college courses on botany for teachers. His major contribution to the field was to the development of a nature-study philosophy through his book, *The Nature-Study Idea*, published in 1903 by Doubleday, Page & Co.³⁹³ This monumental work contains a comprehensive philosophy for the rural educator, complete with principles of practice and purpose.³⁹⁴

³⁹³ Bailey, *The Nature-Study Idea*. Bailey offered the publication to his main publisher, George Brett, of the Macmillan Company, with whom he had secured an earlier agreement that they would publish all of his manuscripts. Brett turned down *The Nature Study Idea* and Bailey asked permission to publish it elsewhere. The book proved to be wildly popular; it went through multiple reprints and four revisions. In 1972 it was even translated into Japanese.

Unlike many of his fellow scientists, including his mentor W.J. Beal, Bailey did not try to define nature-study according to disciplinary boundaries as they did. He was clear in the opening pages of *The Nature-Study Idea* that nature-study was not science:

Now usage has determined a definite office for the name nature-study: it designates the movement originating in the common schools to open the pupil's mind by direct observation to a knowledge and love of the common things in the child's environment. It is a pedagogical term, not a scientific term. It is not synonymous with the old term 'natural history,' nor with 'biology,' nor with 'elementary science.' It is not 'popular science.' It is not the study of nature merely. Nature may be studied with either of two objects: to discover new truths for the purpose of increasing the sum of human knowledge; or to put the pupil in a sympathetic attitude toward nature for the purpose of increasing the joy of living. The first object, whether pursued in a technical or elementary way, is a science-teaching movement, and its professed purpose is to make investigators and specialists. The second object is a nature-study movement, and its purpose is to enable every person to live a richer life, whatever his business or profession may be. Nature-study is a revolt from the teaching of mere science in the elementary grades.³⁹⁵

³⁹⁴ Bailey's contribution to the history of environmental education has been treated in several dissertations. Tyree Minton and Richard Raymond Olmstead both cite Bailey as a key player in their analysis of the larger Nature-Study movement. See Tyree G. Minton, "The History of the Nature-Study Movement and Its Role in the Development of Environmental Education" (Ed.D. diss., University of Massachusetts, 1980), and Richard Raymond Olmsted, "The Nature-Study Movement in American Education" (Ed.D.diss., Indiana University, 1967). Bailey earns a more extensive analysis in Verona LaBud's dissertation, *Liberty Hyde Bailey: His Impact on Science Education*. LaBud, as the title suggests, focuses on his contributions to the methods of science education, namely his advocacy of Agassiz's directive to observe nature first-hand and not through books, and his informality toward nature lessons. LaBud does consider Bailey's role as a science teacher in the classroom, but also the impact he had outside the classroom through his extension work with farmers, his nature-study work with teachers, and his popular lectures and articles for the general public. According to LaBud, Bailey's impact cannot be limited to one audience. Verona LaBud, "Liberty Hyde Bailey: His Impact on Science Education" (Ph.D. diss., Syracuse University, 1964).

³⁹⁵ Bailey, *The Nature-Study Idea*, 4.

Bailey does not view nature-study as an opportunity to proselytize for science. There were scientists, like those addressing nature-study in *Science*, who disagreed with him. But his philosophy was influential among the scientists who professionalized nature-study. So influential, in fact, that Bailey was appointed to the Editorial Committee when the journal *Nature-Study Review* was launched in 1905. And when the American Nature Study Society grew out of the journal in 1908, Bailey was elected as the first President.

Bailey's *Nature-Study Idea* established that the goals of nature-study were numerous and interrelated. The program brought children into contact with objects and phenomena near at hand, which put them in touch with their communities and prepared them for life on the farm. The underlying motivation here was to encourage the child to become a more effective member of their community and to make school more meaningful to everyday life.

Bailey would have preferred to call the study of nature with the purpose of understanding the meaning, "nature-sympathy";³⁹⁶

It is essentially the expression of one's outlook on the world. We must define nature-study in terms of its purpose, not in terms of its methods. It is not doing this or that. It is putting the child into intimate and sympathetic contact with the things of the external world. Whatever the method, the final result of nature-study teaching is the development of a keen personal interest in every natural object and phenomenon.³⁹⁷

³⁹⁶ Ibid.,14.

³⁹⁷ Ibid.,15.

All rural citizens needed an outlook to life that was rooted in nature. Adults could gain this through Bailey's philosophical books and poetry. Children would develop an outlook through studying nature. The hope was that children's commitment to nature and their community would be solidified.

For Bailey, the goal of nature-study was ultimately more important than the method, but he was keenly interested in method. He defined the nature-study method as:

seeing what one looks at and drawing proper conclusions from what one sees; and thereby the learner comes into personal relation and sympathy with the object. It is not the teaching of science—not the systematic pursuit of a logical body of principles. Its object is to broaden the child's horizon, not, primarily, to teach him how to widen the boundaries of human knowledge. It is not the teaching of botany or entomology or geology, but of plants, insects and fields.³⁹⁸

While Bailey legitimized the natural knowledge created by the child in the field making observations of individual organisms, he contended that the accumulation of knowledge was not the key to nature-study. It should be spontaneous and pleasurable, and provide a point of view, rather than the foundation for any future science training.

In practice, nature-study was the direct observation of the natural world in the near-by fields, forests, and streams. Students were urged to study actual objects, rather than reading about them in textbooks. The area of nature study had begun as object lessons, but Bailey objected to the fact that such lessons took natural items out of context when brought into the classroom. According to Bailey, nature-study

³⁹⁸ Ibid., 15-16.

separated itself from object-teaching and laboratory teaching by taking the child into the field to observe the object or phenomenon within its natural surroundings.

Ideally, teachers should take their students into the out-of-doors, but Bailey recognized that this was not always possible. And if it was not possible, then the objects of nature must be brought to the student. As a teacher himself, he had rejected the traditional method of conducting horticulture and agriculture classes whereby students would attend a formal lecture and then visit the university farm to observe hired hands performing the work. Instead, he conducted demonstrations and experiments for his students and worked along side them.

Bailey also encouraged the observation of living nature. Dead things were removed from the context of the living world and thereby provided little information about living, dynamic systems. Again, exceptions were made as collections were encouraged in the rural schools. But children therefore displayed a much greater enjoyment of, and interest in animate nature as opposed to inanimate objects. Whenever possible, it was best to return to nature itself to study the living organisms. And finally, the source of the material for study should be that which was in the students' backyard. Bailey wanted them to recognize and understand the nearby, rather than pursue knowledge of things that they may never encounter in their daily lives.

Beyond reforming lesson plans, Bailey urged that the rural school must physically change to meet the new curriculum. It should be expanded to have a nature-study room, complete with a window for observation of the seasons or wild

creatures, aquaria and terrariums for living items, and a collection of native plant and rock specimens. The space would encourage students to discover on their own, regardless of whether or not the school possessed a qualified teacher. To serve as a model for other school districts, the College of Agriculture at Cornell constructed a model rural school-house on their grounds.

The rural schoolhouse should also have specific outdoor spaces, namely a playground and a garden. The playground offered students the opportunity to play in the open air, which was vital for their health and well-being. Even more importance was attached to the school garden. Bailey advocated more land around schools for a garden because garden work would benefit the child by

developing their creative faculties and encouraging natural enthusiasm; puts the child into touch and sympathy with its own realm; develops manual dexterity; begets regard for labor; conduces to health; expands the moral instincts by making a truthful and intimate presentation of natural phenomena and affairs; trains in accuracy and directness of observation; stimulates the love of nature; appeals to the art-sense; kindles interest in ownership; teaches gardencraft; evolves civic pride; sometimes affords a means of earning money; brings teacher and pupil into closer personal touch; works against vandalism; aids discipline by allowing natural exuberance to work off; arouses spontaneous interest in the school on the part of both pupils and parents; sets ideals for the home, thereby establishing one more bond of connection between the school and community.³⁹⁹

His suggestions were in line with a common aspect of the nature-study movement, the development of outdoor spaces, especially school gardens, for children to toil in. This was especially important for urban centers where children had little access to nature. But, Bailey felt that it was also important for rural school children because

³⁹⁹ Bailey, *The Outlook to Nature*, 213-214.

cultivating and harvesting were an integral part of the rural culture with which they should become familiar.

Nature-study would change the nature of the school. Of this change in method he wrote: "Now we see children carrying only books to school; some day they will also carry twigs and potatoes and animals and stones and tools and contrivances and other personal objects."⁴⁰⁰ Again, this was keeping with the Progressive education movement that advocated active learning as opposed to rote memorization of book knowledge. It was also congruent with the movement in nature education that followed Agassiz's directive to "study nature, not books."

"Fact Is Not to Be Worshipped"

Bailey believed that there were two reasons to study nature: first, to contribute knowledge about the natural world and second, to develop a sympathetic relationship with it in order to make life more enjoyable. He considered the first approach to be science, and the second to be nature-study. The purpose of the scientific approach was to make scientists; the purpose of nature study was to help the student live a fuller, happier life.

Nature-study was criticized by some scientists for being unscientific. But Bailey dismissed their critiques because scientists were not qualified to speak on the subject of nature-study by virtue of their scientific training alone. Understanding the

⁴⁰⁰ L. H. Bailey, "The Common Schools and the Farm-Youth," 967.

world scientifically was important to him, as evidenced by the fact that he dedicated his life to the scientific pursuit of knowledge. According to Bailey, “Nature-study is not primarily a natural-history subject: it is primarily a pedagogical ideal. Natural-history subjects are the means, not the end.”⁴⁰¹ It was true that as children grew older and entered secondary education and beyond, they would take up elementary science with the express purpose of learning to approach the world systematically and rationally, but that was not the goal of nature-study.

E. Laurence Palmer, a former member of the Department of Rural Education at Cornell under Bailey, stated that many trained scientists opposed the Nature-Study program because it was too simplistic and didn’t focus on the acquisition of factual information.⁴⁰² Bailey disagreed. In *The Nature-Study Idea* he wrote: “This is the age of fact, and we are proud of it. But it may also be the age of imagination. Fact is not to be worshipped. The life that is devoid of imagination is dead; it is tied to the earth. There need be no divorce of fact and fancy; they are only the poles of experience.”⁴⁰³ In nature-study, one should avoid what Bailey called the “information method”.⁴⁰⁴ Overloading children with facts and expecting them to remember the information, unconnected to a larger meaning, was of little use to a child.

⁴⁰¹ Ibid., 7.

⁴⁰² E. Laurence Palmer, "The Cornell Nature Study Philosophy," *Cornell Rural School Leaflets* 38, no. 1 (1944): 3-80.

⁴⁰³ Bailey, *The Nature-Study Idea*, 121.

⁴⁰⁴ Bailey, *The Outlook to Nature*, 219.

Further, the nature-study teacher and pupil should not be focused on technical language. In *The Nature-Study Idea* he responded to a critic, who he called “Integument-Man,” who chastised him for his choice of terms in a nature-study leaflet that he had written entitled “How a Squash Plant Gets Out of the Seed.”⁴⁰⁵ His critic was a botanist who accused him of perpetuating inaccurate information in the title. The squash plant, the botanist critiqued, comes out of the integument, not the seed itself. Bailey was exasperated at the over-attention to detail by the scientists. He was quick to respond that if he were to change the title to reflect “verbal fact” he would quickly lose the interest of a young mind because “what child was ever interested in an integument?”⁴⁰⁶ While nature-study was an extension of natural science, the sole purpose was not to study natural history. The goal of elementary science was knowledge; however, the goal of nature-study, according to Bailey, was sentiment based on accurate knowledge.⁴⁰⁷ Therefore, accuracy was essential; it was just not the ultimate goal. Some accuracy could be sacrificed in order to attain sympathy.

⁴⁰⁵ Bailey, *The Nature-Study Idea*, 37-42. The leaflet in question was originally published in the *Cornell Nature-Study Leaflets*: L.H. Bailey, "How a Squash Plant Gets out of the Seed," in *Cornell Nature-Study Leaflets* (Albany: J.B. Lyon Company, Printers, 1904).

⁴⁰⁶ Bailey, *The Nature-Study Idea*.

⁴⁰⁷ *Ibid.*, 14.

Bailey pointed out that “Definition always lags behind knowledge.”⁴⁰⁸ He believed that first the child should acquire knowledge about an organism and phenomena. Later, the definitions and terms will be laid on top of the concepts and complete the knowledge. The fear, though, was that if children began with definitions before they have mastered their understanding of the concept then it will decrease the joy and spontaneity of the knowledge, and that perhaps this knowledge will never be acquired in the first place. This was his major complaint with textbooks that begin with definitions rather than actual knowledge of the object or phenomena.

Bailey’s analysis of the nature-faker debate demonstrated that organisms could be known and treated in a more personal and poetic manner than was typical of the scientific approach and the end result would still be “truth”. One of his favorite outlets for the truths that he uncovered through this personal approach was poetry. He composed verse whenever the inspiration hit him and recorded the lines on spare sheets of paper or in the margins of lecture notes. He published his poems in a variety of nature-study and popular publications, but his best-known collection of poems was *Wind and Weather*, which was part of his Background Books series.⁴⁰⁹

⁴⁰⁸ Bailey, "The Common Schools and the Farm-Youth," 962.

⁴⁰⁹ L. H. Bailey, *Wind and Weather*, The Background Books (New York: C. Scribner's Sons, 1916). Bailey undertook several the creation of a numbers of book series including The Open Country Books, The Rural Outlook Set, and he edited The Rural Science Series. These book series were grouped according to purpose and philosophy. The Background Book series was the most ambitious set that he authored. It contained five books that covered his personal philosophy on religion, government, art, science, and the future of humanity. *Wind and Weather* was the

The collection of poems addressed his relationship with the natural world and displayed a range of emotional expression.

Bailey's poetry guided readers into the natural world and allowed them to witness his respect and reverence for nature. He did not consider poetry a substitute for first-hand interactions with nature, merely a supplement. Bailey held that poetry was needed more than ever in the modern, industrialized world for its sentimental value and its introduction to nature. Poetry, if done correctly, could lead a person natureward and help them love and respect it. It could make the life of the reader fuller and richer through its sentiment. But poetry was not simply about sentiment, according to Bailey: it must be based on the facts of nature in order for it to be most effective because "real love of nature rests on knowledge."⁴¹⁰ As a poet, he was participating in the contemporary trend of documenting one's interaction with nature, alongside such writers as John Burroughs, Mabel Osgood Wright, and Ernest Thompson Seton. And while his poems captured his observations of the natural world around him, they also captured the emotion he felt as he experienced the life out-of-doors.

second book in this series. These books contained the essential background that everyone needed in order to understand the importance of their role in the service of the earth and humanity. In addition to *Wind and Weather*, the books included in this series are: *The Holy Earth; Universal Service, the Hope of Humanity; What Is Democracy?*; and *The Seven Stars*. Bailey, *The Holy Earth*, L. H. Bailey, *Universal Service, the Hope of Humanity* (New York: Sturgis & Walton Co., 1918), L. H. Bailey, *What Is Democracy?* The Background Books (Ithaca: The Comstock Publishing Co., 1918), and L. H. Bailey, *The Seven Stars*, The Background Books (New York: The Macmillan Company, 1923).

⁴¹⁰ Bailey, *The Outlook to Nature*, 38.

Bailey's poems, like his books, dealt with more than the natural and rural life, they also dealt with institutions and practices that were important to living this life more fully. In his poetry, Bailey was freer to express his full range of expressions and emotions. Poetry served a different purpose than scientific description, but they both offered the reader a sense of the organism or activity being described. For example, it is striking to examine what one can learn about the genus *Campanula*, or the bellflower, by looking at two different sources, both written by Bailey. Below is a brief description of the genus in his *Manual of Cultivated Plants*, a flora for common cultivars:

BELFLOWER. Sometimes annuals and biennials, but mostly perennial herbs, some 250 species largely in the northern hemisphere, chiefly in Eu; many of them are choice garden plants.—Often tufted: rootlvs. Frequently unlike the st.-lvs., the latter sometimes few: genus specifically known by the pod ovoid or turbinate and dehiscent below the persistent calyx-rim by pores or separate valves, the clavate style not surrounded by a fleshy disk, corolla bell-shaped to rotate and 5-toothed or-lobed and not split at base or otherwise, fls. Solitary, spicate, racemose, paniculate, not in compact composite-like heads; stamens usually dilated at base; stigmas 3 in ours except *C. Medium*, and caps. 3-celled: caps. Opening near the base in some species.⁴¹¹

This paragraph is followed by descriptions of each species in the genus, all in the same scientific shorthand. This is technical knowledge that a person working with this cultivar would need to know in order to properly identify the plant—the leaf shape, the specifics about the sexual organs, the size and location of the genus. This stands in stark comparison to a poem that Bailey penned about the same genus:

CAMPANULA

There is a ferny dell I know

⁴¹¹ Bailey, *Manual of Cultivated Plants*, 740.

Where spiry stalks of harebell grow,
It is a little cool retreat
Of bosky scents and airs complete.
There is a maze of fragile stems
That hand their pods above the hems
Of mossy fountains crystal clear
'Mongst webby threads of gossamere
And filmy tints of green and blue
A-strung in beads of fragrant dew.
A tiny stroke the blue-bell rings
As on its slender cord it swings,
And if you listed long and well
You'll hear the music in the bell.

And often when I've toiled with men
Or passed my day with plans and pen
Or fled afar on starry seas,
I join the camp of moths and bees
And wander by the minty pools
To sedge and fern and campanules.
And then I lie on twig and grass
And watch the slimy creatures pass
And find the little folk that dwells
So deep inside the azure bells
I wonder how they come and go.
And I listen long and low
I catch the cadence of a note
Astir within the petal throat,
I hear a tiny octave played
And slender music, crystal-rayed.

There are two worlds that I know fullwell—
The world of men and the petal bell.⁴¹²

Here Bailey introduces the reader to a mystical and poetic way of knowing the bellflower family, but one that is nevertheless equally important. He imparts a knowledge that perhaps could lead to identification of the little purple flowers, but is

⁴¹² Bailey, *Wind and Weather*, 64-65. It is interesting that he begins the technical description of the plant with the common name and the poetic description with the genus name. Even here he seeks a balance between common and technical knowledge.

intended to create sentimental value in the beauty of the flower. As the last line articulated, Bailey has his feet planted firmly in the everyday world of humans, but also in the mystical world where, if you listen closely enough, you can hear the sound of the petal bell.

Ideally, a fully realized human being would be able to be both a subjective and an objective observer of the natural world. Training for the former came earlier in life, when the pupil was more open, and continued throughout life; training for the latter came at a stage when the pupil was equipped to think rationally and systematically. In *Uneven Land*, Stephanie Sarver notes that Bailey himself displayed a “dual relationship with nature,” in that he could be both an objective scientist and a subjective observer of nature, using both his rational and intuitive faculties.⁴¹³ In her work on Bailey she examines how he reconciled a scientific understanding of the natural world with a spiritual understanding. For example, in his classes, Bailey wanted his students to learn both factual information and appreciation, and both types of understanding were legitimate. The best example to prove this point is an exam question that Bailey asked his students to answer: on the board he simply wrote “Tell us about strawberries.” His biographer, Dorf, notes that a student was given great latitude in answering this question: “He could write not only on the strawberry’s origin, its botanical relations, varieties, culture, and marketing, but there

⁴¹³ Stephanie L. Sarver, *Uneven Land: Nature and Agriculture in American Writing* (Lincoln: University of Nebraska Press, 1999).

was nothing to prevent him from expounding on the beauty of the strawberry—its color, aroma, flavor.”⁴¹⁴

Sarver’s explanation that Bailey’s dual relationship with nature reflects an “inconsistency” in his life fails to take into account the fact that Bailey’s approach to the natural world was dependent on his motivations. Scientists should learn about the world scientifically in order to further knowledge. For non-scientists, understanding nature was about appreciation and the enhancement of rural life. His seemingly different approaches to understanding the natural world are a product of Bailey’s position astride the garden fence. The world was not black and white to Bailey, but instead colored by shades of gray with many different approaches relevant to understanding nature, and together each approach provided the observer of nature a more complete understanding. Instead of being inconsistent, I would argue that this more complex relationship is best described as displaying complementary aspects.

Bailey believed that it was imperative that the young farm boys who were his students at Cornell be exposed to poetry in order to bring sentiment into their lives and to put their minds toward nature. So, following the lead of President Abbot at the Michigan Agricultural College, he encouraged group meetings to introduce them to poetry. Early in his career he would have gatherings twice a month in which he invited agricultural students into his home to read poetry. After a while, these meetings became so popular that they had to move them to a larger location because the farm youth responded so positively to the poetry.

⁴¹⁴ Dorf, *Liberty Hyde Bailey*, 215.

Four decades before C.P. Snow's now famous Rede Lecture, *The Two Cultures*, where Snow lamented the distance between the world of the humanities and the world of the sciences, Bailey wrote the following words of caution about the unnecessary boundaries being drawn by his contemporaries between the humanities and the sciences: "And it came to pass that men said one way was the best way and other men said their way was the best. And one man called his way Humanistic and the other called his way Scientific; and straightaway they made much trouble for themselves."⁴¹⁵ Bailey believed that an understanding of both the humanities and the sciences were essential to the education of the human being because both provided essential knowledge. Further, he contended that both science and humanities should be taught to youth because they were both integral to the "quest of truth."⁴¹⁶ He argued that both science and literature were hallmarks of the evolution of the "race" and they signified how far humankind had developed. He argued that, "Against all this background, the discussion of the relative importance of the humanities and the sciences seems trivial and empty. These historic separations should now be forgotten, as against the common interests of mankind."⁴¹⁷ He hoped to "make nature-study contribute to the brotherhood" of the sciences and the humanities because he believed they were fundamentally connected in their quest for knowledge. In addition, nature-

⁴¹⁵ Bailey, "Humanistic Elements in Education," 45. Bailey addressed this subject from a scientific standpoint, arguing against the artificial separation between the sciences and humanities in Bailey, "The Science Element in Education."

⁴¹⁶ Ibid.

⁴¹⁷ Ibid., 46.

study could bridge the gap which had widened because of the departmentalization of educational disciplines, separating the sciences from the humanities. Bailey was of a rare breed in the early twentieth century, someone who believed that it was not incompatible to be a scientist and a humanist, a scholar and a philosopher, a university professor and a poet. While others defined themselves by their profession, Bailey expanded his definition of self and profession.

Ten years after his retirement from Cornell, well into the final stage in his life where he could focus on those pursuits he wanted to, Bailey wrote the final installment in his Background Book Series, *The Seven Stars*. The story is about a college graduate, Questor, who headed into the world with newly opened eyes in search of meaning. While in college he had missed much of the happenings in the real world, and he goes forth to examine the rapidly changing world objectively. His journey took him from the city streets, rampant with advertising and commercialism, to the quiet country fields where he found unkempt and run-down farms. All the while he was led by the seven stars of the constellation Pleiades. At the journey's end, Questor concluded that the "meaning of life is its beauty."⁴¹⁸ He realized that he should not simply seek the highest paying job, but a career of satisfaction and contentment. But more than anything he must seek joy and endeavor to realize an "artistic expression of life."⁴¹⁹ These are the larger truths of life. Questor's journey served as a metaphor for Bailey's lifetime quest to seek a true balance between city

⁴¹⁸ L.H. Bailey, *The Seven Stars*, 163.

⁴¹⁹ *Ibid.*, 165.

and country, science and spirit, fact and fancy. To partake in this journey was his wish for everyone.

The Life and Literature of Mabel Osgood Wright

Historians and literary scholars have realized, within the last twenty years, the importance of Mabel Osgood Wright as a leader in the conservation movement and as a female nature writer working from within the domestic sphere. Excerpts from her first book, *The Friendship of Nature*, appeared in Lorraine Anderson and Thomas Edwards' volume highlighting American women nature writers from the nineteenth and twentieth centuries, *At Home on This Earth*.⁴²⁰ In the introduction Anderson laments that Wright's works and influence on nature writing and the conservation movement have remained largely unappreciated despite the fact that she was "the most influential woman in the bird conservation movement of the late 1890s" and "the driving force behind the creation of the first bird sanctuary owned and governed by a state Audubon Society."⁴²¹ An excerpt from one of her early children's books, *Citizen Bird*, appeared in *Birdwatching with American Women*, edited by Deborah Strom.⁴²² Strom hailed her as "one of the forgotten heroes of the American conservation movement."⁴²³ Further, one of her motivational bird conservation

⁴²⁰ Lorraine Anderson and Thomas S. Edwards, *At Home on This Earth: Two Centuries of U.S. Women's Nature Writing* (Hanover, NH: University Press of New England, 2002).

⁴²¹ Lorraine Anderson, "Introduction: The Great Chorus of Woman and Nature," in *At Home on This Earth*, eds. Lorraine Anderson and Thomas S. Edwards (Hanover, NH: University Press of New England, 2002), 1-11, 4.

⁴²² Deborah Strom, *Birdwatching with American Women: A Selection of Nature Writings* (New York: Norton, 1986).

⁴²³ *Ibid.*, 144.

articles, “Keep on Pedaling!” appeared in a recent compilation of classic texts, *Conservation in the Progressive Era*.⁴²⁴ In addition, literary theorist Daniel Philippon, fully recognizing her importance to the conservation movement, analyzes her work along with such well-known male nature writers as Theodore Roosevelt, John Muir, Aldo Leopold, and Edward Abbey and discusses the influences of each on the environmental organizations they helped found.⁴²⁵ Philippon also spearheaded the republication of *The Friendship of Nature* in 1999; this book remains the only one of the twenty-five that she penned, in print.⁴²⁶ While Wright is increasingly recognized for her role in conservation and nature writing, she hasn’t attained the well-deserved status of male contemporaries such as John Muir or John Burroughs. This is perhaps due to what Anderson calls the “home-centeredness in the tradition of women’s nature writing,” where the focus is not on the grandeur of the wilderness, but on the writers land and gardens surrounding her home.⁴²⁷

⁴²⁴ David Stradling, *Conservation in the Progressive Era: Classic Texts*, Weyerhaeuser Environmental Classics (Seattle: University of Washington Press, 2004).

⁴²⁵ Daniel J. Philippon, “Representing 'Nature': American Nature Writers and the Growth of Environmental Organizations, 1885-1985” (Ph.D. diss., University of Virginia, 1998). Philippon’s dissertation was subsequently published in book form: Daniel J. Philippon, *Conserving Words: How American Nature Writers Shaped the Environmental Movement* (Athens: University of Georgia Press, 2004).

⁴²⁶ Mabel Osgood Wright and Daniel J. Philippon, *The Friendship of Nature: A New England Chronicle of Birds and Flowers* (Baltimore, MD.: Johns Hopkins University Press, 1999).

⁴²⁷ Anderson, "Introduction: The Great Chorus of Woman and Nature," 5. Philippon makes a similar point in his introduction to *The Friendship of Nature*, when he

The focus of the scholarly attention on Wright has been largely on her books and articles for adults, with the exception of the previously mentioned excerpt from *Citizen Bird*. The majority of her books were written for an adult audience and mainly appealed to women because of their focus on the domestic sphere inside and in the fields and forests around the home. However, Wright's efforts with children were equally important to her and were integral to her conservation plan. Lorraine Anderson declares that Wright "exercised a profound influence in the field of nature study through her numerous books for children."⁴²⁸ Her books for children were not textbooks, although they did contain useful knowledge of the kind that you might find presented in a textbook; instead, her children's books recounted the adventurous forays into the natural world of their main characters. Further, in some of her books she inserted imaginative elements and humanized animals in order to make them more relatable to her readers.

While scholars have been slow to study female nature writers, we have been even slower to look at their works for children or to focus on the importance attached to appealing to children during the conservation movement. This neglect is due to the fact that children did not vote, write conservation legislation, or publish books about their experiences with nature. Children's participation in the conservation movement

remarks that the book was "[w]ritten at a time when nature was valued mainly for its grandeur and sublimity" and that Wright's book "challenged its readers to appreciate the land on a local, personal, and familiar level...and rediscover the beauty and complexity of their own backyards." Wright and Philippon, *The Friendship of Nature*, 2.

⁴²⁸ Anderson, "Introduction: The Great Chorus of Woman and Nature," 4.

is difficult to document for these very reasons, but this does not diminish their importance as an audience for nature books. Writers like Wright targeted children because they had a natural curiosity with nature and were much more prone to develop a sympathetic relationship with nature. Wright knew through the experiences of her youth that when children formed a sympathetic bond with nature in childhood, the sentiment was more likely to carry over into their adult life. Her children's books remain unexamined critically in part because she infused them with fanciful elements and humanized animals. Historians, especially historians of science, have too long accepted the criticism of scientists regarding these tactics in nature stories. We have focused our scholarly attention on knowledge presented in a rational, scientific manner and have been less inclined to see the relevance of that presented in a fanciful manner.⁴²⁹ As evidenced by the critiques of scientists and educators of sentimental and fanciful representations of the natural world in the late nineteenth and early twentieth centuries, nature was increasingly viewed as a source for rational knowledge. Most scientists minimized the emotional value of nature and criticized those who focused on this aspect. And yet it is a balance of these two aspects of the nature experience—rational and emotional—that Wright sought for children and that she used in her children's books. Rational knowledge provided children with the factual information they needed to understand the mechanics of nature, while appeals to their emotions encouraged a kinship or a sympathetic bond with nature.

⁴²⁹ In historian of science Sally Gregory Kohlstedt's recent article on the nature-study movement the focus is on scientist's involvement and the role that rationality played in the nature-study movement. Kohlstedt, "Nature, Not Books," 324-352.

Childhood and Early Influences

Wright's early experiences had a profound influence on her and, in turn, shaped her adult life. That which impressed her youthful mind and soul, such as the efforts of her father to encourage her love of nature and literature, and the time she spent at her family's summer house in Connecticut, which deepened her kinship with nature, influenced the direction she took in her adult life as a writer and conservationist. She worked tirelessly through her writing and activism to preserve the experiences of her youth for future generations. In order to adequately understand what motivated her literary and conservation career, we must look to her childhood.

Mabel Gray Osgood was born on January 26, 1859 to Samuel and Ellen Haswell Osgood in New York City. By her account, she had a happy childhood. Her father told her that she was born laughing and she claimed that on the day she was born "Love o' Laughter was one of the fairy conclave that gathered at my coming to wish me well."⁴³⁰ In addition to her parents, she joined her two sisters, Agatha and Beatrice, who she lovingly referred to as Gatha and Bea, and her maternal Aunt Eliza in their family home.⁴³¹ The family lived comfortably in a house on the Rhineland block on West Eleventh Street, on the northern boundary of Greenwich Village.⁴³²

⁴³⁰ Mabel Osgood Wright, *My New York* (New York: The Macmillan Co., 1926), 19.

⁴³¹ Eliza was the only sister of Wright's mother. She was unmarried for the early part of Wright's life, which prompted Samuel Osgood to quip, "an unmarried sister was needed in every family," and the girls gave her the nickname Aunt Cinderella, which was shortened to Cinder. *Ibid.*, 9. The character of the lively, unmarried aunt figured prominently in Wright's stories due to the early influence of Cinder. In fact, most of her books have autobiographical elements and those who influenced her in real life walked onto the pages of her works thinly disguised as fictional characters.

New York City served as Wright's playground for the duration of her life. Quite unsatisfied with the books about her beloved city that she read later in her life, she wrote an autobiography that centered around *her* experiences in New York, from her birth until 1880, when her father died suddenly in his sixty-eighth year. The book, *My New York*, recalled many of her favorite features of the city, including Jefferson Market and Washington Square. She also recalled some of the memorable experiences that she had had in the city, including watching Lincoln's funeral procession from the balcony of a family friend's house at the corner of Union Place and Union Square, dancing with young Theodore Roosevelt (whom the children called "Teddy Spectacles") at Dodsworth's Dancing School, and visiting the ruins of the original Barnum Museum after the great fire that destroyed it.⁴³³

⁴³² Wright wrote fondly of her childhood home, No. 118 West 11 Street, in her autobiography; Rhinelander Gardens was the name of the distinctive neighborhood as it was the creation of William C. Rhinelander, a wealthy landowner. Wright was long associated with this landmark. In 1955, when the buildings were to be demolished and replaced by a public school, the *New York Times* lamented their loss because of their history, including the fact that it was the birthplace of Wright. "Public Grade School to Usurp the Old Rhinelander Gardens," *New York Times*, 20 February 1955, 1.

⁴³³ *My New York* received rave reviews from fellow New Yorkers. In her Autograph Album Wright collected some of the letters she received from prominent New Yorkers, including: William Rhinelander Stewart, the grandson of real estate developer William C. Rhinelander; Grant Squires, a Madison Avenue attorney; and Ella Conde Lamb, a New York City artist. Most who wrote to her not only praised the book but also recalled their favorite moments in the book and their favorite childhood memories of the city. Needless to say, with New Yorkers of Wright's generation, the book was an overwhelming success.

The city figured prominently in Wright's life and literature, but the natural places around her influenced her most. Even as she recalled the special places in the city that she frequented, many of the landmarks were open spaces and parks, gardens and greenhouses. While the city where Wright was born was cosmopolitan in her youth, it was also relatively rural with large tracts of undeveloped land and farmsteads in the midst of the city; this would change rapidly over her lifetime. In 1860, when Wright was just a baby, the population of the city was 800,000; by 1920, the city had swelled to 5.5 million inhabitants.⁴³⁴ The largest expansion of urban population was in the 1880s when Wright was in her twenties; urban population increased by about 56 percent in that decade.⁴³⁵ In the first two decades of the twentieth century alone, the population of New York City expanded by 2.2 million people.⁴³⁶ Due to the changing nature of the city, there was an increase in attention to environmental problems in an attempt to make the urban environment physically pleasing and morally uplifting. As detailed by historian Paul Boyer, a revival of interest in moral reform in the 1890's took two different tracks: first, eliminating the negative vices of the city by ridding it of corrupt government officials and immoral pastimes and second, creating positive environments in the cities to establish moral order. This latter movement focused on the physical environment of the city, by

⁴³⁴ Mohl, *The New City*, 13.

⁴³⁵ *Ibid.*, 16.

⁴³⁶ Paul S. Boyer, *Urban Masses and Moral Order in America, 1820-1920* (Cambridge: Harvard University Press, 1992), 189.

establishing public parks and playgrounds, and initiated a City Beautiful movement. The assumption at the base of this latter movement was that a more harmonious urban environment would morally uplift the people of the city who had become physically and morally depressed because of the rapid expansion. Embedded within this assumption was the belief that nature was morally uplifting in and of itself and that these public outdoor areas stood in as a substitute for nature in this urban environment.

One of the most ambitious outdoor projects began in 1857, just two years before Wright was born, when the Central Park Commission accepted the plan of architect Frederick Law Olmstead for a landscaped park in the middle of the city. According to Roy Rosenzweig and Elizabeth Blackmar, the authors of *The Park and the People*, the park was controlled by the wealthy in the 1860s, despite the rhetoric about the park as a place for all of the people of the city in which to congregate, relax, and leave the racial and class tensions of the city behind them.⁴³⁷ The wealthy would use the winding streets of the park for carriage rides, which mainly served the purpose of seeing and being seen by other members of the upper class. The “middling” class, or the professional class to which Wright and her family belonged in, used the park a bit less than the wealthy as they attended the outdoor concerts,

⁴³⁷ Roy Rosenzweig and Elizabeth Blackmar, *The Park and the People: A History of Central Park* (Ithaca, NY: Cornell University Press, 1992).

visited the zoo, and played in the ice skating rink in winter.⁴³⁸ The working classes were underrepresented in the park because of their lengthy work schedules and the lack of affordable transportation to the park. The park became more “public” in the final decades of the nineteenth century, as labor requirements relaxed and new railway lines were added to transport people from Lower Manhattan, where the working class lived, to Upper Manhattan. Wright recalled in her autobiography visiting Central Park for a birthday party she attended in the 1870s and walking home out of disgust after the affluent hostess skipped over her repeatedly for the pony rides.⁴³⁹ She did not have the money for a ride home so she walked the three miles back to Greenwich Village, all the while feeling a bit nervous about walking through the park and on the streets of New York City by herself.

Wright did visit the park on other occasions with her family. The open space of Central Park made her feel as if she were in the “real country,” and when she could visit it in her younger days, she reveled in its beauty.⁴⁴⁰ Central Park was also important to Wright’s father who proclaimed that “many New-Yorkers look upon the

⁴³⁸ According to Rosenzweig and Blackmar, there were three million visitors from the middle class to every four million visitors from the elite class in the 1860s. *Ibid.*, 225.

⁴³⁹ This story was appeared in a chapter titled “Parties—Two in Particular that Nearly Made Me A Socialist.” This chapter detailed some of her earlier experiences with the wealthy of the city that left her feeling frustrated and inferior because of her lack of social grace and her middle class upbringing. Wright indicated that “a germ had entered my soul, to be developed as the years went by into a positive hatred of social ceremony and form.” Wright, *My New York*, 137.

⁴⁴⁰ *Ibid.*, 26.

Central Park as being, with its waters and flowers and music for all, as good a commentary on the Sermon on the Mount as any in the Astor Library.”⁴⁴¹ While Central Park and the other city parks provided a natural interlude to the bustle of the city, Osgood recognized the need for open natural spaces and taught his daughter to find beauty even in the midst of the city. Wright exclaimed, “Pan walks through the city streets in spring and pipes and calls—another street cry that people hear but do not understand...and really he was never quite at ease in my New York.”⁴⁴² In order to truly commune with nature, the family would have to find a place outside of the city.

Osgood was a conscientious parent, actively considering the physical and mental requirements of a healthy and happy childhood for his girls. He believed that nature had a redeeming power and was a powerful agent against illness. Instead of offering medical cures to children, he contended that they could equally benefit from “light, air, and water.”⁴⁴³ In an effort to find refuge from city life, five months out of the year he took his family to Fairfield, Connecticut, which was about 50 minutes north of the city by train. In 1857, Osgood bought eight acres of land in Fairfield and began building the family summer estate, Mosswood, and the family moved into it

⁴⁴¹ Samuel Osgood, "Books for Our Children," 732.

⁴⁴² Wright, *My New York*, 97.

⁴⁴³ Samuel Osgood, *American Leaves: Familiar Notes of Thought and Life* (New York: Harper & Brothers, 1867), 18.

the year before his youngest daughter, Mabel, was born.⁴⁴⁴ Fairfield was inhabited by both locals and others who sought refuge from the harried life of the city.⁴⁴⁵ Both groups sought to maintain its rural nature.

Fairfield was attractive because of the diversity of landscapes within the region—lush forests, open prairies and marshes, and the beach that bordered Long Island Sound. It was here that Osgood taught his youngest to see beauty and reverence in nature. In her autobiography, Wright claimed that the fairy “Love o’ Nature...was of my blood and flesh.”⁴⁴⁶ Her father saw in her a deep love and understanding of nature early on; when she was merely six years of age Osgood boasted in *The Atlantic Monthly*:

I confess for my own part, that I never saw and enjoyed Nature truly until I learned to see it through a bright child’s eyes. Good Providence gave us our May at about the same time; and the child had been the priestess of our domain, and had made spring of our autumn, May of our September. She notices first only bright colors and moving objects and striking sounds; but with what zest she noticed them, and jogged our dull eyes and ears! Then she observed the finer traits of the place, and learned to call each flower and tree, and even each weed, by name, and to join the birds and chickens in their glee. She gathered bright weeds as freely as garden flowers and, with larger wisdom than she knew, came shouting and laughing with a lapful of treasures, in which the golden-rod or wild aster, the violet or buttercup, the dandelion or honeysuckle, were as much prized as the pink or larkspur, the rose or lily.

⁴⁴⁴ Samuel Osgood’s love for things German prompted him to change the name of the family estate to Waldstein, a combination of the German words for forest and stone. The family changed the name of the estate back following the First World War due to anti-German sentiment. Wright, *My New York*, 220.

⁴⁴⁵ Thomas J. Farnham, *Fairfield: The Biography of a Community, 1639-1989* (West Kennebunk, ME: Published for the Fairfield Historical Society by Phoenix Pub., 1988).

⁴⁴⁶ Wright, *My New York*, 19.

Darling seer, how much wiser and better might we be, if we had as open eye for loveliness and worth within and without the inclosures of our pride and our pets! I called the first rustic arbor that I built by her name; and May's Bower, on its base of rock, with solid steps cut into the granite by a faithful hand, and with a sight of the distant sea through its clustering vines, is to us a good symbol of childhood, as observer, interpreter, and lover of Nature. When I see in a handsome book or magazine for children any adequate sketch of natural scenes and objects, I am grateful for it as a benefaction to children, and a help to them in their playful yearning to read that elder alphabet of God.⁴⁴⁷

Within this quote, we can see the blueprint for the trinity that was to be at the heart of Wright's life: nature, literature, and religion.

Samuel Osgood's life and career served as a model for that of his daughter's. The Cambridge Divinity School graduate was influenced by William Ellery Channing and, with his D.D. degree in hand, embarked on his professional career in the service of Unitarianism.⁴⁴⁸ After his graduation, he accepted a number of temporary posts before finally accepting a position at the Church of the Messiah in New York City in 1849. Over the course of his career as a minister, Osgood preached many noteworthy sermons and published many of them; the most remembered was a sermon that he delivered from his homemade pulpit, Union Tower, on the family property in

⁴⁴⁷ Osgood, "Books for Our Children," 731.

⁴⁴⁸ In addition to the D.D. that he earned, Osgood received the degree of S.T.D. from Harvard in 1855 and an LL.D. from Hobart College. For more about the life and career of Samuel Osgood, see his obituary in the *New York Times*: "The Rev. Dr. Osgood Dead," *The New York Times*, 15 April 1880, 5. His friend and future son-in-law also wrote a sketch of his life following his death: James Osborne Wright, *Samuel Osgood, D.D., L.L.D.: A Biographical Sketch* (Boston: Press of David Clapp & Son, 1882). He spent his career preaching the virtues and beliefs of Unitarianism; however, following his retirement in 1869 he began attending a Protestant Episcopal Church and accepted the tenets of this denomination, though he never preached in a formal capacity.

Fairfield, just eleven days after the end of the Civil War.⁴⁴⁹ In part because of his career as a preacher and because of his significant influence on her life, Wright wrote that in youth she had trouble separating her father and God.⁴⁵⁰

One of the other fairy godmothers that guided Wright's life was Love o' Books. Her house was overflowing with books; as a result she read everything from the respectable poetry books that covered her father's shelves to the lurid magazines that Mary Daly, the Osgood's "help," stashed in secret corners of the house.⁴⁵¹ One of her favorite books as a young girl was *Alice in Wonderland*; she loved the book so much that she slept with it under her pillow for a while. Wright began her bookshelf with *Alice in Wonderland* and soon added many other books to her collection,

⁴⁴⁹ The pulpit stood atop a large boulder on their family property; the boulder bore the inscription: "God and Our Country, 1862". The pulpit is gone, but the boulder and its inscription are still visible today along the road to Birdcraft Sanctuary. This site was obviously very influential to Wright because she had a picture of the pulpit and a copy of the program in her Autograph Album. Atop the picture she wrote, "The people sat in roadway & adjoining field." Mabel Osgood Wright Autograph Album, Fairfield Public Library, Fairfield, CT.

⁴⁵⁰ Wright, *My New York*, 98. She explained that this distinction was difficult when she was very young and her "mental evolution" had not yet reconciled the relationship between "Our Father in Heaven" who seemed so far away and her "father in the study" whose presence was always a comfort to her. The main character in her first nature-romance, *The Garden of a Commuter's Wife*, expressed the same sentiment about her father, which indicates how truly autobiographical her books could be. Mabel Osgood Wright, *The Garden of a Commuter's Wife* (New York: The Macmillan Company, 1901).

⁴⁵¹ As a child, she witnessed many literary discussions between her father and one of his favorite companions, William Cullen Bryant, who were both members of the Goethe Club, a New York group who met to discuss Goethe and other German literature. Osgood had a love of books and he formally organized his collection into the family library in the 1870's. Wright recalled in *My New York* that one of her greatest pleasures was visiting booksellers with her father.

including: “*Little Women*...*The Girlhood of Shakespeare’s Heroines*, *The Memoirs of a London Doll*, *The Wide, Wide World*, Napier’s *Tommy Try and What he did in Science*, *The English Orphans*, Lillian’s *Golden Hours*, *Lamb’s Tales from Shakespeare*, *The Wilds of Africa*, *Leatherstocking Tales*, ...Marion Harland’s first *Cook Book*, Longfellow’s poems, Miss Yonge’s *Dove in the Eagle’s Nest*, and so on.”⁴⁵² Her reading was diverse; however, these titles demonstrate her tendency, even in youth, toward imaginative stories and natural themes.

Her love of books was perhaps influenced by the fact that she was born into a literary family. Her mother was the great-grand niece of Susanna Haswell Rowson, the British author of *Charlotte Temple*, a fact of which she was very proud.⁴⁵³ One afternoon while waiting on her father, who had a wedding to attend, she was let into the gates of the courtyard at Trinity Church, where the real Charlotte Temple was buried; she spent the afternoon reading the book while sitting on her coat next to Temple’s grave. In addition to reading great stories, she loved listening to her sister Bea recall the fairy stories of Grimm and Hans Christian Andersen that she had

⁴⁵² Wright, *My New York*, 81.

⁴⁵³ Rowson was born in England, but lived briefly in the United States as a child and returned for good in 1793. She was also well known as an actress in Philadelphia. *Charlotte Temple* was originally published in 1790; the first American edition appeared in 1794. Due to its popularity it has remained in print ever since, with approximately 150 editions. Wright’s mother had a copy of the book and it was such a treasured item Wright was afraid to ask her if she could touch the tattered volume, let alone read it. On the afternoon that Wright sat in the churchyard at Trinity Church her father had bought her a copy of the book in its dime book format. This is likely the edition that Wright read: Susanna Rowson, *Charlotte Temple; a Tale of Truth*, Munro’s Ten Cent Novels; No. 7 (New York: George Munro & Co., 1867).

memorized; these stories stimulated her imaginative life as a child. Along with many contemporaries, Wright believed that children were primitive and should get a healthy dose of fairy tales and make believe; without these the child would truly be deprived of childhood. Her parents agreed and allowed her to indulge her fancy, but they were quick to rein it in should it become too unreasonable. In adolescence, her literary tastes shifted slightly to encompass romance stories, an interest that suited her later career as a writer of nature romances.

Nature books were always Wright's first love. When visiting bookstores with her father, she would always find her way to the nature section. On one such occasion, she met her future husband, James Osborne Wright, a British rare book dealer who had been working in the United States for almost a decade. While she was perusing a tucked away section of nature books, her father brought a "slight, tallish young fellow," wearing a "tweed tailless Scotch cap set on somewhat awry" to introduce him to her; this man was "clean shaven save for an unusually well-curved mustache" and had "sea-gray blue eyes."⁴⁵⁴ Osgood indicated to his new friend that he wanted him to meet his "outdoor girl"; apparently the young man was expecting a child and was surprised when a nineteen-year-old woman stepped out from the row that she had been browsing.⁴⁵⁵ Their mutual love of nature and books would cement their bond and they married six years later, following the death of Osgood. In many ways James Osborne Wright replaced her father as the companion with whom she

⁴⁵⁴ Wright, *My New York*, 224-225.

⁴⁵⁵ *Ibid.*, 226.

could share her interests, and he would pick up the task of encouraging her writing career.⁴⁵⁶ However, Samuel Osgood inadvertently encouraged his daughter's writing career earlier and even unknowingly shaped her approach to storytelling.

The minister had very definite ideas about women and their roles in society and in the household; these attitudes informed the actions and choices made by Wright. True to his religious nature, he granted Mary, the mother of Jesus, an exalted place and declared her the example of "true womanhood" as dictated by God; women were expected to model their lives on Mary's example in order to fit into God's plan.⁴⁵⁷ According to Osgood, God had given the sexes very different attributes in order to fulfill their distinct roles. Men were strong and rational, while women were attractive and emotional.⁴⁵⁸ In one essay he described the American woman as a

⁴⁵⁶ Wright's first book, *The Friendship of Nature*, which she published fourteen years after her father's sudden death, was dedicated to her first soul mate in nature and literature, her father. Her second book, *Birdcraft*, was dedicated to her second soul mate, James Osborne Wright, whom she affectionately referred to as Evan after a Welsh botanical writer (Wright apparently adopted the habit of giving people she liked an alternate name that she had made up). Evan, or James, was no stranger to the world of publishing but most of his publications were catalogs or bibliographies. In addition to the previously mentioned tribute to Samuel Osgood, he also edited a selection of poems by John Ruskin. John Ruskin., *Poems*, ed. James Osborne Wright (New York: J. Wiley & Sons, 1882). Further, he would come to own a bookstore at 6 East 42nd Street in New York City.

⁴⁵⁷ Samuel Osgood, *The Hearth-Stone: Thoughts Upon Home-Life in Our Cities* (New York: D. Appleton and Co., 1854).

⁴⁵⁸ *Ibid.*

“delicate plant.”⁴⁵⁹ While it was true that women were guided by emotion, he believed that they should keep this trait in check with careful thought.

According to Osgood, a good Christian woman in the mid-nineteenth century should learn to balance a number of traits in order to be successful. Nevertheless, he was very clear that women should occupy a sphere separate from men; their true domain was the home. Women should strive to be wives and mothers, as the institutions of marriage and parenthood were what they were best suited for and what God had intended for them. Osgood lamented that “No greater mistake can be made than that which would take woman from her sphere of dignity and power, and make her the rival of man, in pursuits which require his ruder nature and sterner will.”⁴⁶⁰ Women, according to Osgood, should not strive to be in professions that would have them competing with men, because they were not designed to excel in the masculine professions such as “lawyers, preachers, physicians, or merchants.”⁴⁶¹ Women were not to be the servants of men, nor their playthings or competitors. Instead, women should be raised to fill their role in their separate sphere “as the equal, not the rival, of man.”⁴⁶² Women should be educated, but not in the pleasantries of music and dance expected of a trophy wife; instead, there should be some substance to their education

⁴⁵⁹ Samuel Osgood, *American Leaves: Familiar Notes of Thought and Life* (New York: Harper & Brothers, 1867), 97.

⁴⁶⁰ Osgood, *The Hearth-Stone*, 37.

⁴⁶¹ *Ibid.*, 216.

⁴⁶² *Ibid.*, 222.

in order to complement their husbands. But, even though women were expected to be educated, they still could not reach the intellectual potential of men: Osgood wrote that “[t]ruly trained, the girl will have as much *reason* as the boy; and hers will be more intuitive, whilst his may be more formal and severe in its *reasoning*.”⁴⁶³

Much to the consternation of the young Wright, Osgood held firm to these beliefs and discouraged her from her dream of going to medical school. Nevertheless, she played with the idea that young girls could be skilled in the art of being a physician. In *Wabeno the Magician*, the young protagonist, Anne, skillfully removed a fish hook from her companion’s hand with his pocket knife, proclaimed, “I’m not a bit afraid of blood.”⁴⁶⁴ When the doctor arrived and saw what a good job she had done, he proclaimed that she was “Dr. Anne.” But Anne’s accomplishments were merely the foolish imaginings of a naïve young girl. Despite her early dream of going to medical school, Wright fully accept her traditional role as a woman, as enunciated by her father, when she entered adulthood. Like her parents, she was opposed to feminism and women having a career outside the home, especially in the male-dominated professions.

Wright’s desire to become a physician was not unheard of in the nineteenth century. In fact, the first woman to graduate from medical school in the United States

⁴⁶³ Ibid., 224.

⁴⁶⁴ Mabel Osgood Wright, *Wabeno the Magician: The Sequel to "Tommy-Anne and the Three Hearts"* (New York: The Macmillan Company, 1899), 70.

did so ten years before Wright was even born.⁴⁶⁵ However, the profession remained almost exclusively male. Part of the problem was that an education in science was not readily available to women. In *Women Scientists in America* Margaret Rossiter details the obstacles encountered by women seeking access to a scientific education and acceptance within the scientific professions since the early nineteenth century.⁴⁶⁶ She points out that even though there was positive development in terms of women being able to earn science degrees at the turn of the century, women were not readily given access to jobs in their chosen profession. The sciences still remained gendered; when women did find work in the sciences, they sought to perform “women’s work” in science, or, as Rossiter explains, work that men did not want to do because it was not lucrative or it involved working with women and children or work that was very

⁴⁶⁵ The graduate was British-born Elizabeth Blackwell who came to the United States to study because the requirements of licensing were more lax than in her home country. She graduated from the Geneva Medical School in Wright’s home state of New York. Roy Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity*, 1st American ed. (New York: W. W. Norton, 1998), 357. For an account of Blackwell’s life and career, see her recently re-released autobiography, with a new introduction by Amy Sue Bix: Elizabeth Blackwell, *Pioneer Work in Opening the Medical Profession to Women*, Classics in Women's Studies (Amherst, NY: Humanity Books, 2005).

⁴⁶⁶ Margaret W. Rossiter, *Women Scientists in America: Struggles and Strategies to 1940* (Baltimore: Johns Hopkins University Press, 1982). Rossiter continues her detailed analysis of women’s struggles in the scientific professions from the Second World War until the advent of Affirmative Action in Margaret W. Rossiter, *Women Scientists in America: Before Affirmative Action, 1940-1972* (Baltimore: Johns Hopkins University Press, 1995).

tedious.⁴⁶⁷ Women were able to find a niche for themselves, but they were not fully integrated into the scientific professions.

Some women were afforded a basic scientific education, not to prepare them for a career in the sciences, but because they were the purveyors of knowledge and values to the next generation as mothers and teachers. In *The Science Education of Young Girls*, Kimberley Tolley demonstrates that science instruction was more available to girls in their schools in the early nineteenth-century than to boys; the latter were typically prepared for college by studying the classic subjects of literature and Latin.⁴⁶⁸ Girls were trained in the sciences for two reasons: first, they needed to be prepared to teach the children of the next generation about science and, second, women were the primary popularizers of scientific knowledge for fellow women and children.⁴⁶⁹ Female popularizers helped science gain some cultural credit by making it more palatable for women and children.⁴⁷⁰ Men and women had socially

⁴⁶⁷ Rossiter, *Women Scientists in America*, 53. Another approach to engaging women in the sciences was through “marital collaboration” as detailed by Marilyn Ogilvie in Marilyn Bailey Ogilvie, “Marital Collaboration: An Approach to Science,” in *Uneasy Careers and Intimate Lives: Women in Science, 1789-1979*, eds. Pnina Abir-Am and Dorinda Outram (New Brunswick, NJ: Rutgers University Press, 1987). The dynamics of “marital collaboration” in the sciences was further examined in Helena M. Pycior, Nancy G. Slack, and Pnina G. Abir-Am, eds., *Creative Couples in the Sciences* (New Brunswick, N.J.: Rutgers University Press, 1996).

⁴⁶⁸ Tolley, *The Science Education of American Girls*.

⁴⁶⁹ *Ibid.*

⁴⁷⁰ This practice was not unique to the nineteenth century. For example, James Secord’s analysis of a mid-eighteenth century children’s book on Newtonian philosophy indicates that, even then, children’s authors saw the need to make scientific information palatable for the general audience: “Tom Telescope”, the child

sanctioned separate and distinct roles within the sciences: for the most part, men were involved in the production of scientific knowledge, while women were prepared in the sciences in order to serve as scientific educators. Nina Baym argues that women recognized and accepted the gender divide and that they believed it to be a “constructive division of labor.”⁴⁷¹ Women were “affiliated” with the sciences and their role was a crucial aspect of the profession because they generated an interest in science through their work in popularizing it, efforts that ultimately benefited the sciences and scientists.

Further, women were increasingly replacing men as teachers in the classrooms of the schools and more and more children were going to school than ever before. According to David Macleod, author of *The Age of the Child*, the percentage of children attending school regularly in 1890 was 80 percent and the number continued to grow up through the Great War.⁴⁷² At the same time, more and more women were being hired to teach the growing number of pupils. Thomas J. Schlereth argues that the occupation of teaching shifted from a masculine pursuit to a feminine one by the

guide who led readers through the Newtonian Universe, made natural philosophy entertaining through the imaginative lessons he imparted through the fascinating instruments he brought with him. Secord, "Newton in the Nursery".

⁴⁷¹ Baym, *American Women of Letters and the Nineteenth-Century Sciences*.

⁴⁷² David I. Macleod, *The Age of the Child: Children in America, 1890-1920*, Twayne's History of American Childhood Series (New York: Twayne Publishers, 1998).

early years of the twentieth century.⁴⁷³ Children were increasingly coming under the influence of women not only in their preliminary scientific education, but also in their education in general.

Wright held an interesting mix of attitudes regarding the roles of women. She accepted the values of her father regarding women's roles in society as caretakers in the domestic realm. Further, she accepted the attitude of her mother that women should not voice their opinions in political matters. She did not pursue a career outside of her home and remained at the family estate in Fairfield while her husband commuted to work in the City during the mild months of the year. She was not what Carroll Smith Rosenberg, the author of *Disorderly Conduct*, referred to as the "New Woman" that appeared in the 1880s and 1890s.⁴⁷⁴ This "New Woman" rejected "conventional female roles" and "asserted their right to a career, to a public voice, to visible power, [and] laid claim to the rights and privileges customarily accorded bourgeois men."⁴⁷⁵ Yet Wright was no shrinking violet. She did actively pursue a career in writing which took her outside of the home on many occasions as she traveled to the publishers to review manuscripts or to meet with an editor or illustrator. And when it came to her work she wrote with great authority and clear

⁴⁷³ Thomas J. Schlereth, *Victorian America: Transformations in Everyday Life, 1876-1915* (New York: HarperCollins Publishers, 1991). Schlereth indicated that 86 percent of the teachers in the early twentieth century were women.

⁴⁷⁴ Carroll Smith-Rosenberg, *Disorderly Conduct: Visions of Gender in Victorian America* (New York: Oxford University Press, 1986). Rosenberg notes that she borrows the phrase "New Woman" from Henry James who used the phrase in his novels *Daisy Miller* and *Portrait of a Lady*.

⁴⁷⁵ *Ibid.*, 176.

definite goals for the process of editing and publication. She was very plainspoken and didn't mince words. She accepted the position of leadership of the Connecticut Audubon Society, leading both men and women in conservation. Further, she readily admitted in her autobiography that she hated social convention and didn't quite understand the ways of women. The influence that her parents exerted on her early in life made a lasting impression and she was never quite able, not willing, to break from the conventions of Victorian womanhood—but she did occasionally test them.

Teaching and writing harmonized perfectly with the expectations of women in general as transmitters of knowledge to the next generation. Specifically, these pursuits harmonized with Osgood's expectations of a respectable vocation for a Christian woman. Although her father had passed away by the time that Wright began her literary career, he had encouraged his youngest daughter to informally teach by cultivating her literary and naturalist skills. Through her nature books, Wright undertook the task of educating, mainly, women and children about the facts of nature and sharing her philosophy of nature and humanity's role toward it. Wright was able to produce her nature books from within the confines of her home, which fit the expectations of a woman of her traditional status.⁴⁷⁶

⁴⁷⁶ Ironically, her life did not conform to one of the major expectations of women—that of motherhood. Wright never had children, yet still considered the education of youth as her duty.

Wright's Literary Career

Wright combined her natural knowledge and her joy of writing into a prolific career. Over forty-years, she wrote twenty-six original books and over one hundred articles for newspapers and magazines. Her publications ranged from nature romances to natural historical essays. She wrote for adult audiences as well as children; women as well as men; secular audiences as well as religious ones. It is apparent that Wright consciously modeled her career on that of her father for reasons already discussed. She benefited from his spiritual and natural insights from a very young age and accepted, and perpetuated, many of the precepts of her father. She mimicked him in beliefs, but also in actions. She wrote extensively for the popular press as did her father, and likewise authored multiple books. She even went so far as to model her persona on her father. In 1867, Osgood described his favorite retreat on his Fairfield property where he could “sit with some noble book in hand under the shelter of my twenty-dollar study, with stately oaks and walnuts around, with chirping birds and chattering squirrels, keeping company with the ceaseless murmur and rustle of the leaves.”⁴⁷⁷ In 1900, James Osborne Wright, her husband, took a photograph of his wife sitting in a wooden arbor, with a dense forest in the background. She was in deep reflection, capturing her thoughts in a notebook, and on the table to her side were a few books. The only thing that differed from the scene rendered by Osgood

⁴⁷⁷ Osgood, *American Leaves*, 325. Osgood was proud that he built two cedar arbors on his property for the purpose of “retreat in the heat of the summer days.” After a number of years, vines covered these arbors, which for Osgood, added to their beauty.

was that she had a large dog lying at her feet.⁴⁷⁸ However, while Osgood wrote voluminously about God's plan and natural law as applied to the human realm, Wright applied the idea of a divinely ordained plan, which worked in conjunction with natural law, to the natural realm.

Wright was also encouraged in her writing early on by a family friend and poet, William Cullen Bryant, when he submitted a sonnet that she wrote at the age of eighteen to the *New York Evening Post*.⁴⁷⁹ In 1890, she began anonymously publishing her reflections on nature in the *New York Times Literary Supplement* and the *New York Evening Post*. She was also supported by family friend, Edmund Clarence Stedman, to publish the essays in book form. She submitted the manuscript to George P. Brett, the President of Macmillan press, who was a friend of her

⁴⁷⁸ Wright was inordinately fond of dogs and they appeared in the vast majority of the books she wrote. She also owned many dogs in her lifetime. In her autobiography, she wrote: "Most of us had a kitten period in our lives, from which, circumstances permitting and if we are wholesome out-of-door folk, we graduate to dogs, not lap pets but gentlemanly dogs." Wright, *My New York*, 31-32.

⁴⁷⁹ Wright had great respect for Bryant and remembered the family friend fondly in her autobiography. She would accompany her father to the meetings of the New York Historical Society and they would both accompany an aging Bryant home. Of Bryant she wrote: "It was in these many homeward bound walks that I came closest to this poet whom most of the world thought cold, because his personality was always wrapped in a cloak of reserve, which was not pride or self-consciousness, but like the shyness of the very young who hesitate to express themselves in words." *Ibid.*, 209. One of the earliest selections in her Autograph Album was an excerpt of Bryant's poems "Scene on the Banks of the Hudson" written and signed by the author. William Cullen Bryant, excerpt from "Scene on the Banks of the Hudson," February 17, 1875, in Wright, "Autograph Album."

husband's.⁴⁸⁰ The manuscript was accepted and published as her first authored book, *The Friendship of Nature*, in 1894.⁴⁸¹

In general, her first book received favorable reviews, with only minor criticisms. A *New York Times* reviewer praised her excellent literary style, and an anonymous review for *The Dial* claimed that she was “a true poet in the Emersonian sense, namely, in the power to see the miraculous in the common.”⁴⁸² The criticisms she received regarding this first effort were primarily aimed at her natural historical facts. For example, one critic questioned her description of a bobolink's nest based on her own experience.⁴⁸³ The praise for Wright's literary style continued with her future projects, as did the occasional criticism of her facts. Nevertheless, her first book helped to establish a reputable writing career.

⁴⁸⁰ Wright shared the process by which her first book was published in an interview: "Mabel Osgood Wright Recalls Pleasures of a Busy Literary Life," *Bridgeport Sunday Post* 8 March 1925, n.p. Mabel Osgood Wright Clipping File, Fairfield Historical Society.

⁴⁸¹ Mabel Osgood Wright, *The Friendship of Nature: A New England Chronicle of Birds and Flowers* (New York: The Macmillan Company, 1894). This first book was hailed as a classic and was republished in 1999, with an introduction by literary scholar Daniel J. Philippon. Wright and Philippon, *The Friendship of Nature: A New England Chronicle of Birds and Flowers*. Wright had previously published, in a small run, a translation of a short story, *The Bibliomaniac*, by Charles Nodier at the encouragement of her husband and for his publishing company. Charles Nodier, *The Bibliomaniac*, trans. René Vallery-Radot and Mabel Osgood Wright (New York: J.O. Wright & Co., 1894).

⁴⁸² "Books About Nature," *The Dial*, 16 September 1894, 159, and "Review of *the Friendship of Nature*, by Mabel Osgood Wright," *New York Times*, 28 May 1894, 3.

⁴⁸³ Elizabeth W. Shermerhorn, "At Home with the Birds," *The New England Magazine*, June 1898, 407.

Whereas women were permitted limited entrance into the sciences, there were fewer obstacles for them in the field of nature writing. Sharing natural knowledge through pen and paper with a non-scientific audience, again, fell into the range of acceptable activity for a proper Victorian lady. After her first published collection of essays, Wright's focus remained on nature, but she taught its moods and habits by using a diverse array of literary styles, including field guides, narrative field guides, and nature-based narrative. By focusing on writing nature books she tapped into a growing demand amongst Americans for books that paid homage to the natural world.

Peter Schmitt, in *Back to Nature*, noted that Americans, influenced by European Romanticism, have viewed nature and the rural countryside as a source of goodness and even as a source of American identity and values.⁴⁸⁴ Interestingly, while people praised the countryside and the rural values it embodied, they did so increasingly from the city. At the turn of the century Americans were reluctant to go “back to the land” but instead went “back to nature.”⁴⁸⁵ This response, Schmitt explains, was due to the fact that city dwellers “valued nature’s spiritual impact above its economic importance.”⁴⁸⁶ They sought reprieve from their urban existence in a variety of ways including nature walks, camping, gardening, birdwatching, and by bringing nature into their homes through nature books. Wright adopted many of these

⁴⁸⁴ Schmitt, *Back to Nature*.

⁴⁸⁵ *Ibid.*, xix.

⁴⁸⁶ *Ibid.*

patterns as well; she retreated from the city bustle in many of the same ways. Spending endless hours walking the shoreline, fields, and forests of her Connecticut retreat and on these trips she observed the local bird life. She was also an avid gardener, and she continued the work of her parents in sculpting the landscape. Wright shared her love of these activities through her writing and allowed others to invite her into their homes and share her experiences with them.

The largest category of books that Wright published was her nature-driven narratives; these were also the books in which she shared her love of gardening. The vast majority of these books were nature romance novels, known as “the Barbara books”. The first and best known in this series was *The Garden of a Commuter’s Wife*. These novels told of romantic love between a man and a woman, Barbara and Evan, but also the love of the author for the out-of-doors.⁴⁸⁷ Through these books, Wright gives her readers a glimpse into her largely suburban life, complete with details on gardening and communing with suburban nature. Her “Barbara books” were organized as a gardener’s diary, with dated entries that contained information about the timing of planting, tips for cultivation, and a timeline of what would be in bloom in a typical New England garden. What set her books apart from gardening guides was that this useful information was woven in and out of a story of Barbara’s

⁴⁸⁷ Wright, *The Garden of a Commuter's Wife*. Wright published her natural history romances under the pseudonym of Barbara until January 1906 when she finally acknowledged that she was, in fact, Barbara. Many had already suspected this was the case because the books paralleled her life so closely. The husband in the novel, Evan, was British born and commuted into the city via train for work just as Wright’s husband James did. Barbara was left at the family estate with her dog, Bluff, and her garden.

daily life with Evan. Wright followed *The Garden of a Commuter's Wife* with seven other books in the series written between 1901 and 1910.

Wright's second authored book and one of her most popular was a field guide about birds entitled *Birdcraft*.⁴⁸⁸ Her purpose in writing this book was to provide the bird enthusiast with a simple, organized guide to approximately two-hundred common birds in the field. She provided descriptions of their plumage, habits, song, range and migration patterns, as well as short vignettes about her personal experiences with various species. Although this book was intended for non-scientists in order to teach them to identify birds, she also wove scientific information throughout the text. Her strategy was to organize the birds by Order and Family, providing the Latin names for each; but in her key to the birds, she categorized the birds by traits that a student of bird-study could easily identify, including categories such as "Birds Conspicuously Blue" and "Daintily Plumed Small Birds Feeding About the Branches and Terminal Shoots of Trees." In an effort to make the book user-friendly, yet scientifically accurate, she provided both common names and scientific names.

Wright sought approval for *Birdcraft* from one of her fellow nature writers, John Burroughs, and sent a copy of the book to him. In a letter responding to her gift Burroughs wrote: "you have made a reliable & interesting book, I wish that I could have had the help of such a work when I began my bird studies. I shall take pleasure

⁴⁸⁸ Mabel Osgood Wright, *Birdcraft; a Field Book of Two Hundred Song, Game, and Water Birds* (New York: The Macmillan Company, 1895).

in recommending it to persons who write me for the name of a handy & reliable book on birds.”⁴⁸⁹ But not all of the reviews for her book were as positive as Burroughs’. C. Hart Merriam, head of the U.S. Biological Survey and member of the Editorial Committee of *Science*, reviewed the book for *Science* and while he wrote that “the text contains much of interest and, taken as a whole, is well written,” he went on to detail problems with her scientific accuracy. Merriam asserted that “[n]ow and then misleading statements creep in, particularly with reference to the geographic ranges.”⁴⁹⁰ His harshest criticism was reserved for what he considered to be the “sweeping ignorance and prejudice” that characterized her descriptions of certain birds; in particular he was critical of her representation of the Blue Jay and the Crow as cannibals, and he cited scientific evidence that downplayed their consumption of the “eggs and young of insect-destroying song-birds.”⁴⁹¹ Merriam finished on a bright note, however, concluding that “[o]n the whole, Mrs. Wright’s ‘Birdcraft’ may be recommended as a source of pleasure and assistance to the many lovers of nature who are trying to learn more about our common birds.”⁴⁹² His tone softened a bit in his review of the second edition of *Birdcraft* where he concluded that “[t]he book in

⁴⁸⁹ John Burroughs to Mabel Osgood Wright, 5 July 1895 from West Park, New York, Mabel Osgood Wright Autograph Album, Fairfield Public Library, Fairfield, CT.

⁴⁹⁰ C. H. M. "Review of Birdcraft, a Field Book of Two Hundred Song, Game and Water Birds," *Science* 1, no. 23 (7 June 1895): 635-636.

⁴⁹¹ *Ibid.*, 636.

⁴⁹² *Ibid.*

its present form is attractive, interesting and helpful and should be in the library of every lover of birds.”⁴⁹³

Merriam’s were not the only criticisms of the accuracy of her book. An anonymous reviewer for the *Atlantic Monthly* criticized her execution of the book because of her “imperfect training in ornithological science.”⁴⁹⁴ According to this reviewer, the problems hinged on her ill-conceived and inadequate descriptions of bird songs and less than specific measurements of bill lengths. Sara Hubbard, who reviewed the book for *The Dial*, criticized Wright’s “attempts at rendering the songs of birds in the English vernacular.”⁴⁹⁵ Wright’s attempts to make the book more user-friendly were not deemed successful. But not all reviewers found her characterizations of the bird songs as English words problematic. The reviewer for *The Nation* found her attempts to meld user-friendly and scientific approaches refreshing. The reviewer noted that she adequately paid her respects to the conventions of science:

Each of the biographies in which the author frees her own mind is preceded by due formalities, in which she is minded to observe the dogma and ritual of the established high church in all matters of nomenclature, diagnosis, habitat, and the like. Such orthodoxy cannot fail to find favor with the hierarchy of the present ornithological dispensation.⁴⁹⁶

⁴⁹³ C. M. H. "Review of Birdcraft, a Field Book of Two Hundred Song, Game, and Water Birds," *Science* 6, no. 153 (3 December 1897): 850.

⁴⁹⁴ "Comments on New Books," *The Atlantic Monthly*, August 1895, 276-284, 277.

⁴⁹⁵ Sara A. Hubbard, "Books About Birds," *The Dial* 19 (1 July 1895): 16-18, 17.

⁴⁹⁶ "Review of 'Birdcraft'," *The Nation* 60 (30 May 1895): 428-429, 428.

In the end this reviewer found the most value in the pleasant nature of the book and the fact that “[s]he is clearly in love with her subject, and her pliant pen adorns bird-traits with many charmingly turned expressions of decided originality.”⁴⁹⁷ Wright was careful to respect the scientific facts of nature, although her efforts did not always meet with the agreement of professional scientists, but in her mind the bare facts could not stand alone – as some of her critics seemed to wish -- and entice her audience further into study. Instead, one of the characteristics of much her writing was to take these scientific facts and to present them in a way that could be rendered useful to the lay reader. As a result, her books were popular with the reading public and recognized by scientists for this fact, if not always praised by them due to their deviation from scientific propriety.

Wright’s guide to common birds joined a number of other such guides in the final decades of the century. Birdwatching was gaining in popularity as the sentiment in bird study shifted away from collecting bird specimens and toward the study of living birds in their habitat. This movement toward studying living birds was a reaction to the collecting craze of both scientists and amateurs. In order to make it easier to study the bird in the bush enthusiasts wrote the field identification guides and books about bird behavior. Many of these early books were written by women.

Among the more popular of Wright’s contemporaries who were penning bird books were Olive Thorne Miller, Neltje Blanchan, and Florence Merriam Bailey. Miller was one of the earliest women to write on birds, writing four such books

⁴⁹⁷ Ibid.

before the turn of the century. Miller believed that birds were the “brothers” of humans and as a result deserved not to be slaughtered by hunters and collectors.⁴⁹⁸ Her books consisted primarily of anecdotes and observations that she had made during her studies. She imbued her subjects with human traits and emotions; her winged subjects could be “tyrants” as was the case of the cat-bird in *Bird-ways*, they could get divorces, and parents could give their baby birds lessons in behavior in her book *In Nesting Time*.⁴⁹⁹ Despite her obvious anthropomorphization Miller did not treat birds fantastically. Nellie Blanchan De Graff, the wife of Frank Doubleday of publishing fame, wrote a number of gardening and bird books under the pseudonym Neltje Blanchan. Blanchan’s best known book, *Bird Neighbors*, combines personal anecdotes based on her observation and field identification guide with information about identifying characteristics, range and migration patterns. Blanchan denied that her book was scientific, “if the term scientific is understood to mean technical and anatomical.”⁵⁰⁰ Instead her plan was to produce an accessible and accurate book. The final author who was contemporary to Wright was Florence Merriam Bailey. Bailey, the sister of U.S. Biological Survey head C. Hart Merriam, published some of the

⁴⁹⁸ Miller dedicates a whole chapter in her *Bird-ways* to the human-bird bond. Olive Thorne Miller, *Bird-Ways* (Boston: Houghton, Mifflin and Co, 1885).

⁴⁹⁹ The first two examples were taken from *Bird-Ways* while the final example was from *In Nesting Time*. Olive Thorne Miller, *In Nesting Time* (Boston: Houghton, Mifflin and Co, 1888).

⁵⁰⁰ Neltje Blanchan, *Bird Neighbors. An Introductory Acquaintance with One Hundred and Fifty Birds Commonly Found in the Gardens, Meadows, and Woods About Our Homes* (New York: Doubleday, Page & Co., 1897), ix.

earliest and best known bird identification guides. Her first book, *Birds Through An Opera Glass*, published in 1889, indicated her desire for people to appreciate living birds by observing them in the field.⁵⁰¹ She was a prolific author and published three more popular bird guides in the next thirteen years, including *A-Birding on a Bronco*, *Birds of the Village and Field*, and *Handbook of Birds of the Western United States*.⁵⁰²

Both Miller and Blanchan were considered popular writers and amateur bird enthusiasts, but according to Marcia Myers Bonta, the author of *Women in the Field*, while Bailey's early books were popular, she was more scientific than they because she turned her attention to writing in a more scientific manner and for scientific journals.⁵⁰³ Bailey's *Handbook of Birds of the Western United States* was a companion field guide to the *Handbook of Eastern North America* written by Frank M. Chapman, an ornithologist at the American Museum of Natural History.⁵⁰⁴ She

⁵⁰¹ Florence Merriam Bailey, *Birds through an Opera Glass* (Boston: Houghton, Mifflin and Co., 1889). For more information on Bailey and her inspiration for writing bird books see: Harriet Kofalk, *No Woman Tenderfoot: Florence Merriam Bailey, Pioneer Naturalist* (College Station: Texas A&M University Press, 1989).

⁵⁰² Florence Merriam Bailey, *A-Birding on a Bronco* (Boston: Houghton, Mifflin and Co, 1896), Florence Merriam Bailey, *Birds of Village and Field: A Bird Book for Beginners* (Boston: Houghton, Mifflin and Co., 1898), and Florence Merriam Bailey, *Handbook of Birds of the Western United States: Including the Great Plains, Great Basin, Pacific Slope, and Lower Rio Grande Valley* (Boston: Houghton, Mifflin and Co., 1902).

⁵⁰³ Marcia Myers Bonta, *Women in the Field: America's Pioneering Women Naturalists* (College Station: Texas A&M University Press, 1991).

⁵⁰⁴ Frank M. Chapman, *Handbook of Birds of Eastern North America* (New York: D. Appleton and Co., 1895).

dedicated her life to studying birds alongside her husband Vernon Bailey, also a biologist for the U.S. Biological Survey, and published her findings in the journals *The Auk* and *The Condor*. She was rewarded by the scientific community for these efforts by being elected as the first female member of the American Ornithological Union and she received an honorary LL.D from the University of New Mexico, which earned her the title of Dr. Bailey.⁵⁰⁵

In her introduction to the female ornithologists that she profiled, Bonta claimed that both Olive Thorne Miller and Mabel Osgood Wright were considered “dabblers” by more serious female ornithologists, in contrast to Bailey’s scientific respectability.⁵⁰⁶ Even though Miller and Wright were admitted to the A.O.U. as well, they did not dedicate their lives to the science of ornithology. Wright incorporated an appreciation of science and scientific information into her works to a larger degree than Miller, but both were primarily focused on entertaining and educating a non-scientific audience. However, as the science of ornithology professionalized and nature became a source of rational, scientific knowledge, those

⁵⁰⁵ Bailey did have a bit advantage in her scientific endeavors because both her brother and her husband were scientists. Her brother was the President of the A.O.U. when the society was opened to female members; this decision was undoubtedly influenced by the fact that his sister was an accomplished author and expert on birds. She was also able to dedicate her life to science and to spend so much time in the field because she was married to a man who worked in the field and she was able to accompany him on his numerous collecting trips.

⁵⁰⁶ Bonta, *Women in the Field*, 182. Bonta doesn’t even mention Neltje Blanchan. Her focus was on women who dedicated their lives to bird study and not on popular amateur bird enthusiasts.

who decidedly addressed nature for a lay audience were seen as operating outside the boundaries of science and therefore their work was not considered as respectable as it had been earlier. This attitude did not hamper Wright's efforts as she did not see herself as a scientist or her work as contributing to the scientific knowledge of birds; instead, she considered herself a nature writer and a conservationist and she viewed nature as a source of sentiment and imagination in addition to being a source of scientific knowledge.

As previously mentioned, women were responsible for the education of children, as mothers and teachers, and as a result the vast majority of those who were writing nature books for children were women. After the publication of *Birdcraft*, Wright spent the next five years writing books exclusively for children at a rate of one per year, and after that she wrote three more books for a younger audience. Sections of four of her children's books were published as three separate classroom readers. In total, eleven books out of her twenty-six volumes, or forty-two percent, were written for children. This was a significant contribution to children's nature literature at this time and represented almost half of the books that she wrote. Wright's work in this area merits greater consideration than it has received to date and I will take this task here in Chapter Six.

Wright continued her user-friendly approach of blending scientific information with anecdotes in her narrative field guides. Her fourth and fifth books, *Citizen Bird* and *Four-footed Americans and Their Kin*, were story-driven field

guides for children.⁵⁰⁷ The books worked as a set because they were both about the adventures of two young siblings, Nat and Dodo, who spent the summer outside of the city at their uncle's residence, Orchard Farm.⁵⁰⁸ Their uncle, Dr. Roy Hunter, was a naturalist who, through the help of his daughter, taught these city children about the birds and mammals in the country. Much of the instruction occurred in the field during the daily adventures of Dr. Hunter and the children, but like a good nature-study teacher he also had a room in his house called the "Wonder Room" filled with bird specimens (collected for scientific purposes) for the children to examine closely. Through the dialogue of the characters, both books presented, in a non-threatening way, details regarding scientific classification and nomenclature, identification, physiology, and life histories. Wright did use scientific language, usually through the voice of Dr. Hunter, but explained it in a simple, straightforward manner. In addition, at the end of each book there was a classification chart with both scientific and common names.

⁵⁰⁷ Mabel Osgood Wright, *Four-Footed Americans and Their Kin*, ed. Frank M. Chapman (New York: The Macmillan Company, 1898), and Mabel Osgood Wright and Elliott Coues, *Citizen Bird: Scenes from Bird-Life in Plain English for Beginners* (New York: The Macmillan Company, 1897).

⁵⁰⁸ The influence of Louisa May Alcott can be seen in the name of the setting; Orchard Farm is loosely based on Orchard House, the place where Alcott wrote one of Wright's favorite books, *Little Women*. For some children's authors the home in which they lived provided the setting for their stories. This was certainly the case for Wright. For a discussion of how childhood homes and hometowns affected specific authors, including Louisa May Alcott, see Mark I. West, *Wellsprings of Imagination: The Homes of Children's Authors* (New York: Neal-Schuman Publishers, 1992).

Citizen Bird was co-written with the well-respected nineteenth-century ornithologist Elliot Coues, and published in 1897, just two years before Coues' death at the age of 57 years. Coues was best known for his *Key to North American Birds* and his *Check List of North American Birds*, two useful tools to ornithologists.⁵⁰⁹ Wright was involved in the collaboration from the book proposal until its publication.⁵¹⁰ In her Autograph Album she was put a section of ten letters that were, in her words, "selected from a series of 250 written during and after we wrote 'Citizen Bird' together."⁵¹¹ Wright was clear from the beginning about what Coues' role in the book would be, indicating in her outline of the manuscript that she submitted to the Macmillan Company which parts he was to write or assist in the

⁵⁰⁹ Elliott Coues, *A Check List of North American Birds* (Salem, Mass.: Naturalists' Agency, 1873), and Elliott Coues, *Key to North American Birds*. (Salem, Mass.: Naturalists' Agency, 1872). For additional information regarding Coues' career and the general history of ornithology in the late nineteenth and early twentieth centuries, see Mark V. Barrow, *A Passion for Birds: American Ornithology after Audubon* (Princeton, NJ: Princeton University Press, 2000).

⁵¹⁰ Wright actually proposed *The Child's Book of Birds*, which became *Citizen Bird*, as the first book in a series of six books alternately called the "Orchard Farm Series" and the "Heart of Nature." All of these books were designed to be collaborations. Of these six books only the first two were published. Her plans for this series of books can be found in the Macmillan Company Records: Mabel Osgood Wright, "The Childs Book of Birds," undated, Macmillan Company Records, Manuscripts and Archives Division, New York Public Library, New York; Mabel Osgood Wright, "Heart of Nature Series," undated, Macmillan Company Records, Manuscripts and Archives Division, New York Public Library, New York; and Mabel Osgood Wright, "The Orchard Farm Series," undated, Macmillan Company Records, Manuscripts and Archives Division, New York Public Library, New York.

⁵¹¹ This statement is handwritten at the top of the following letter: Elliot Coues to Mabel Osgood Wright, 25 July 1897 from Salem, New York, Mabel Osgood Wright Autograph Album, Fairfield Public Library, Fairfield, CT.

writing of. Some of these parts did not make it into the final book and were slightly changed, but by-and-large Coues was responsible for the more scientific and technical aspects of the book, including the discussion of anatomy, writing a key to help readers identify birds, and providing a glossary of technical terms; the latter two sections never made it into the finished project.⁵¹² He was also responsible for the descriptions of “the locally western species” of birds covered in the manual.⁵¹³ While the genesis is not covered in the letters it is clear that Wright benefited from the collaboration through her association with a respected member of the scientific ornithology community.⁵¹⁴ His coverage of the technical sections of the book lent the book credibility as well. Wright did not completely rely on Coues’ name to lend

⁵¹² Mabel Osgood Wright, “The Childs Book of Birds,” undated, Macmillan Company Records, Manuscripts and Archives Division, New York Public Library, New York.

⁵¹³ Ibid. The sections each author wrote were not named explicitly in the book and Coues relished the mystery. In a letter to Wright he indicated that he had received several letters guessing the authorship of sections of the book and he implored Wright to keep up the mystery by not addressing any inquiries on the matter because he believed that it would be advantageous in getting people to discuss the book. Wright was a bit leery of his request and in a letter to her publisher about a different matter she mentioned Coues’ request and justification for the request. She remarked that Coues was “such an odd stick” and that she made it clear to him that Mr. Brett and Frank Chapman did know the nature of their collaboration. Elliot Coues to Mabel Osgood Wright, 5 September 1897 from Portland, Maine, Mabel Osgood Wright Autograph Album, Fairfield Public Library, Fairfield, CT; and Mabel Osgood Wright to George P. Brett, 8 August 1897 from Fairfield, Connecticut, Macmillan Company Records, Manuscripts and Archives Division, New York Public Library, New York.

⁵¹⁴ In one letter from Coues to Wright he stated that his wife was the one who first suggested that they collaborate. This indicates that it was Coues who approached Wright, but who exactly initiated the collaboration is not clear. Elliot Coues to Mabel Osgood Wright, 11 March 1897 from Portland, Maine, Mabel Osgood Wright Autograph Album, Fairfield Public Library, Fairfield, CT.

credibility to the book. She spent the winters of 1893 and 1894 at the American Museum of Natural History in New York City, studying bird specimens under the supervision of two resident scientists, Joel A. Allen and Frank M. Chapman, in order to bolster her knowledge of bird morphology.

The purpose of the book, beyond teaching children to identify common birds, is inherent in the title. Through the words of Olive, Dr. Hunter's daughter, we find out that a citizen is "a member of a nation, especially a republic; one who owed allegiance to a government and is entitled to protection from it."⁵¹⁵ Wright intended to introduce birds as fellow *citizens* to humans on earth with similar rights to existence and protection and who provide a valuable contribution to the nation through their consumption of injurious insects and mammals and who aid in the germination of certain plants. Further, birds are part of nature's plan to keep these injurious species in check. However, since understanding human government is more likely for a child than understanding nature's plan, Wright indicated that Citizen Bird kills insects "in order to pay his rent and taxes, as a good citizen should."⁵¹⁶ The ultimate purpose of *Citizen Bird* was to impel young human citizens to protect their fellow avian citizens and to encourage the government – federal, state and local – to do their part as well.

⁵¹⁵ Wright and Coues, *Citizen Bird*, 51-52.

⁵¹⁶ *Ibid.*, 59.

The reviews for *Citizen Bird* were overwhelmingly positive.⁵¹⁷ Again C. Hart Merriam served as a reviewer for *Science*. In order to test the effectiveness of the book, he read it to his two daughters; the book was an overwhelming success for the older girl and as a result he recommended the book for children age seven and up.⁵¹⁸ Merriam admired the skills of the author: “The story is charmingly told, kindling an interest in bird-life which is kept up to the end. The child is taught a multitude of entertaining facts about nature, and at the same time filled with a healthy sentiment against the wanton destruction of birds and their eggs.”⁵¹⁹ Merriam was critical of some of the information, and argued that “[a] few of the statements are a little lax from the standpoint of scientific precision” but that these inaccuracies did not detract from his conviction that “the book as a whole may be commended as by far the best bird book for boys and girls yet produced in America.”⁵²⁰ A reviewer in *The*

⁵¹⁷ The book was written for children and both authors hoped that it would be adopted as a textbook in schools. According to Coues the book was recommended for use in the schools by Dr. William T. Harris, the U.S. Commissioner of Education. There is, however, little evidence that it was formally recommended for use in formal nature-study venues like the *Nature-Study Review*. Elliot Coues to Mabel Osgood Wright, 6 August 1897 from Portland, Maine, Mabel Osgood Wright Autograph Album, Fairfield Public Library, Fairfield, CT. In the same letter, Coues also indicated that the book was praised by President McKinley. Further, he addressed some criticisms brought to his attention in a previous letter by Wright from someone he called “Aunty Miller”. While he never indicated “Aunty Miller’s” first name, one could assume that he is referring to Olive Thorne Miller who as a fellow authority on birds would have been in a good position to criticize the text.

⁵¹⁸ C.H.M., "Review of Citizen Bird," *Science* 6, no. 149 (5 November 1897): 706-707.

⁵¹⁹ *Ibid.*, 706.

⁵²⁰ *Ibid.*

Bookman, a literary journal, was more exuberant with their praise. The reviewer wrote that:

We are certain that no better book than this has ever been written upon ornithology for the young reader; the skill and care with which the authors have retained the facts of science and yet have made them attractive to the youthful imagination by their romantic treatment is a rare achievement and one that calls for the gratitude of the reader, old as well as young. For, as nearly always happens when a scientific subject is treated with authority and lucidity, with freshness and poetic feeling, the readers of *Citizen Bird* will know no limit of age.⁵²¹

Wright had achieved, in the eyes of her reviewers, an effective blend of fact and fancy that served her dual purposes of education and eliciting an emotional sympathetic response from her audience.

Wright's next nature guide was written in the same vein as *Citizen Bird*, and served as a companion book, but this time she focused on mammals. *Four-footed Americans and their Kin* continued the story of Dr. Roy Hunter, his daughter Olive, and his niece and nephew, Dodo and Nat; they are joined at Orchard Farm for the winter by the parents of Nat and Dodo, Mr. and Mrs. Blake.⁵²² Already well versed in the birds of the region, the family turned their attention to the common mammals in the region. Again, Wright revisits the theme that these critters have the right to be protected as fellow "four-footed Americans". She also followed the same structure as *Citizen Bird* with an explanation of the relationship of mammals to each other and a

⁵²¹ "Review of *Citizen Bird*," *Bookman* 6 (September 1897): 78-79.

⁵²² Wright, *Four-Footed Americans and Their Kin*.

chart breaking down the animals by Order, Family, Genus and species, and finally, explanations of the habits and characteristics of the common mammals. Once again, she used a simple explanatory style. Even though she did use technical terms, she grouped together the mammals in a simple manner that children could understand, including the “pouch wearers,” “hoof wearers,” “gnawers,” and “winged hunters.”⁵²³

Four-footed Americans was the result of another collaborative effort by Wright and a well-respected scientist. Wright wrote the text, but it was edited by American Museum of Natural History ornithologist Frank M. Chapman. He was best known for his *Handbook of Birds of Eastern North America*, which was published just three years earlier.⁵²⁴ The collaboration was a good one, and their association would continue throughout her life. The following year Chapman tapped Wright to serve in the Audubon Department of his new journal *Bird Lore*; here she was able to advise the local Audubon Societies about pertinent issues and available materials. Wright worked with Chapman on *Bird Lore* for thirty-five years (until the issue that announced her passing); she was an editor for the School Department and a Contributing Editor in the latter part of her life. Upon her death Chapman wrote the following about her contribution to the cause of bird conservation: “To the incalculable influence exerted by her pen in promoting an interest in birds and their protection, Mrs. Wright rendered the cause of conservation an even greater service by

⁵²³ Ibid., 105-107.

⁵²⁴ Chapman, *Handbook of Birds of Eastern North America*. For more information on Chapman’s contributions to ornithology, see Barrow, *A Passion for Birds*.

her unsparing personal devotion to its ends.”⁵²⁵ Again the reviewers noted minor criticisms regarding the more technical portions of the book, but overall the book was favorably reviewed.⁵²⁶

Four of the books that Wright published for children were narrative nature stories.⁵²⁷ The first two, *Tommy-Anne and the Three Hearts* and *Wabeno the*

⁵²⁵ Frank M. Chapman, "Mabel Osgood Wright: 1859-1934," *Bird Lore* 36 (July 1934): 280. There is a curious omission of correspondence from Frank Chapman in Wright's Autograph Album. She included letters from a number of notable figures in science, including Charles Sumner, J. Tyndall, John Sage, William Dutcher, William T. Hornaday, and of course, her first collaborator, Elliot Coues, but there is no correspondence with Chapman despite their lengthy working relationship. Perhaps the closeness of their relationship rendered him more familiar, and less worthy of noting their association in the album.

⁵²⁶ W.H. Osgood noted that there were "errors in typography and nomenclature" that were overlooked by the editor. But his final conclusion was that "[i]n a household where such a book finds a place children are sure to grow up knowing and loving animals of their own country." W.H. Osgood, "Review of 'Four-Footed Americans and Their Kin'," *Science* 8, no. 207 (16 December 1898): 877-878. An anonymous reviewer for *The Nation* indicated that "[f]or all that concerns the accuracy of matters relating to the mammals, the reputation of Mr. Chapman is a sufficient guarantee." They finally concluded that "[o]n the whole, the book is likely to prove attractive to nature-loving boys and girls, and, we hope, profitable to its authors and publishers." "Review of 'Four-Footed Americans and Their Kin'," *The Nation*, 17 November 1898, 376.

⁵²⁷ Wright's seventh and tenth books – *The Dream Fox Story Book* and *Dogtown* – were written for children. *The Dream Fox Story Book* was a story of a young boy's adventure in an imaginative world, but it was not nature-based. Mabel Osgood Wright, *The Dream Fox Story Book* (New York: The Macmillan Company, 1900). And *Dogtown* was written for both children and adults. It is the continuation of the tale of Tommy-Anne's dog Waddles who appeared in *Tommy-Anne and the Three Hearts* and *Wabeno the Magician*. The story deals with the happenings of the dogs and people at Happy House, the home of Tommy-Anne. Mabel Osgood Wright, *Dogtown: Being Some Chapters from the Annals of the Waddles Family, Set Down in the Language of Housepeople* (New York: The Macmillan Company, 1902).

Magician, are fanciful stories about a young girl's adventures in the natural world.⁵²⁸ These stories are imaginative nature fairy tales that asked readers to suspend their beliefs and accept that the main human character could communicate with nature through her imagination. These two books, which were ones in which Wright experimented most freely with fancy and imagination, will be dealt with extensively in the next chapter. The latter two were far less imaginative, but instead relayed how actual children learned about nature. *Aunt Jimmy's Will* is a romantic tale of a young girl who became an orphan when her father died and was forced to move to the city to live with distant relatives. She is a country girl at heart, and it is her attunement to nature that saved her spirit, and that of her young cousin, who is placed into her care. She teaches him, and the reader, about the healing power of nature while providing some natural historical information. *Gray Lady and the Birds* is the story of a bird-study class and their lessons over the course of the year. Wright based the *Gray Lady* on herself, right down to her name (Gray was Wright's middle name). She wrote *Gray Lady* in a style that children could read, but its intended audiences were parents or teachers.⁵²⁹ They could share the stories with their pupils or use them as the basis for their own bird-study lessons.

⁵²⁸ Mabel Osgood Wright, *Tommy-Anne and the Three Hearts* (New York: The Macmillan Company, 1896), and Mabel Osgood Wright, *Wabeno the Magician; the Sequel to "Tommy-Anne and the Three Hearts."*

⁵²⁹ This was not Wright's only effort to reach teachers. In fact, excerpts from *Tommy-Anne and the Three Hearts*, *Wabeno the Magician*, *Citizen Bird*, and *Four-footed Americans and their Kin* were compiled into the Heart of Nature Series of classroom readers. There were three separate readers in this series that were published in 1904, including: Mabel Osgood Wright, *Stories of Birds and Beasts*,

Wright did make one foray into teaching without her pen. In 1897, the same year that she wrote her first children's book, she invited approximately twenty local children to form a bird-study group at her home. Little is known about this group--there is one surviving picture of the class--but through an article that she wrote for *Bird Lore* about conducting bird classes, we can gather insight into her method. While she conceded that, a "good, accurate, and interesting" bird book would teach children about the birds, she nevertheless asserted that the best option was to gather them out-doors and look at the "bird in the bush."⁵³⁰ She advised leaders to gather about a dozen children, between the ages of six and twelve, once a week in the morning during June and July. The classes should be held in a close natural setting so as not to tire the children, but also because the focus should be on the birds that are nearby. She acknowledged that getting young children to learn the identifying characteristics of birds on the wing was difficult, so she advocated the use of mounted birds or an Audubon bird chart for the students to study. She encouraged the teachers not to be stuffy about their subject.

There is a group of people with ultra theoretical tendencies, who insist upon considering the bird merely as a feathered vertebrate that must not be in any way humanized, or taken from its perch in the evolutionary scheme, to be brought to the plane of our daily lives. In teaching children, I believe in

The Heart of Nature Series (New York: The Macmillan Company, 1904), Mabel Osgood Wright, *Stories of Earth and Sky*, The Heart of Nature Series (New York: The Macmillan Company, 1904), and Mabel Osgood Wright, *Stories of Plants and Animals*, The Heart of Nature Series (New York: The Macmillan Company, 1904). A compilation of the readers was published in 1906. Mabel Osgood Wright, *The Heart of Nature* (New York: The Macmillan Company, 1906).

⁵³⁰ Mabel Osgood Wright, "A Bird Class for Children," *Bird Lore* 1 (1899): 100.

striving to humanize the bird as far as is consistent with absolute truth, that the child may, through its own love of home, parents, and its various desires, be able to appreciate the corresponding traits in the birds.⁵³¹

By relating the life of the bird to the life of the child, children would be aided in their understanding, but also encouraged to form a sympathetic bond with the winged creatures.

Wright's Conservation Career

Wright's literary career went hand in hand with her conservation concerns. She wrote books to educate her audience about the natural world and to encourage them to love and respect it, in the hopes that they would also work to protect it. She was quite in step with her contemporaries on this effort. Americans began to adopt a conservation ethic after the Civil War. Explorers and naturalists explored nature in order to document the wildlife and plants; chunks of land were set aside for protection as National Parks; governmental agencies such as U.S. Fish Commission and the U.S. Geological Survey were established; legislation such as the Forest Reserve Act and the Lacey Act were passed to protect the nation's wildlife and land; and the public became involved by forming conservation organizations like the Sierra Club and the National Audubon Society.⁵³² In these years Americans were increasingly brought in

⁵³¹ Ibid.

⁵³² For a collection of primary and secondary sources that detail the concerns of conservationists from the nineteenth century on, see Roderick Nash, *American Environmentalism: Readings in Conservation History* (New York: McGraw-Hill, 1990).

touch with nature through travel, nature walks, and nature books for arm-chair naturalists.

According to Wright, there were those people who were predisposed toward nature. This primal connection to the natural world was not learned, but was innate.

In every town or country village there is some one who takes more than passing interest in the life outdoors, who has a keener eye and more responsive ear than his neighbor, coupled with a heart that has a bit of Eden still lodged in it, so that it keeps tender and yearning toward the simple, direct affections of life, as expressed in childhood and the lives of the timid wild brotherhood, whether foot or wing.⁵³³

Recall that in her autobiography, Wright wrote that her love of nature was part of her “flesh and blood”; she believed that she was one of those fortunate ones who was born with an innate connection to the natural world. Nevertheless, even if a person was not born with nature lodged in their heart and mind, they could learn to appreciate it, with some assistance. It was the responsibility of those more attuned to nature to bring their love and appreciation to those around them. She asked her reader:

Are you one of these? If so, do you not realize that from your very make-up you draw more freely from nature’s bounty than do your neighbours, and are you not bound to share your pleasure with them? Not alone because it is the pleasure, but that through the knowledge that comes with all real joy, the wild bird of beast may be more fully understood, and therefore protected.⁵³⁴

⁵³³ Mabel Osgood Wright, *Gray Lady and the Birds; Stories of the Bird Year for Home and School* (New York: The Macmillan Company, 1907), xi.

⁵³⁴ *Ibid.*

It was this sense of responsibility that led Wright to teach people about the natural world through her literature, her involvement in the Audubon movement and through her creation of the first Audubon owned nature sanctuary in the United States.

Among Wright's biggest concerns was the conservation of birds. She joined others around the nation who were appalled at the slaughter of birds for non-scientific purposes.⁵³⁵ Bird enthusiasts in individual states began to organize Audubon Societies, with their primary purpose being to promote bird protection.⁵³⁶ Eventually, the National Audubon Society organized as well. As Barrow has noted in his *Passion for Birds*, these early societies were more interested in creating change through

⁵³⁵ Wright supported the collection of birds for scientific and educational purposes. She gave Dr. Hunter a collection of birds in his "Wonder Room" in Citizen Bird and she used the collection at the American Museum of Natural History to prepare for her publications. At the forefront of the movement against non-scientific collecting was the American Ornithological Union. The A.O.U. held that collecting bird specimens in order to study them scientifically or to create educational and museum mounts was acceptable, if not necessary. Nevertheless, the organization opposed the slaughter of birds for commercial purpose, as with the millinery trade. Out of this concern grew the bird protection committee, which focused on education and legislation. One of their early successes was the A.O.U. Model Law, which restricted the killing, selling, or purchasing of songbirds or their nests and eggs.

⁵³⁶ One member of the A.O.U., George Bird Grinnell, took the protection of birds especially seriously and advocated the formation of a society dedicated to bird protection. The resulting Audubon Society became official in 1886. It was a more egalitarian organization as it was open to anyone who wanted to join. However, after the initial year, which saw an enthusiastic membership drive, the following year membership declined. This caused financial difficulties and the organization was dismantled. However, in 1896 the organization was revived with the formation of the Massachusetts Audubon Society by two women, Harriet Lawrence Hemenway and Minna B. Hall. Inspired by their enthusiasm, William Dutcher, the A.O.U. Treasurer and head of the bird protection committee, initiated a campaign to begin state Audubon societies. From this effort, a number of state societies came into being and eventually the national organization came to life again.

education rather than legislation. The focus of their educational efforts was children because it was believed that they could influence the future of bird protection efforts.⁵³⁷ After the Civil War, children, especially young boys, took great pride in amassing a collection of dead birds, bird nests, and eggs. The collections were put on display in home museums. There was a high demand for these natural historical items and people would buy, sell or trade these items from commercial collectors in order to complete or complement their collections. Another concern of the period was the trend of wearing bird feathers or whole birds on ladies hats. Birds were collected by milliners and parts of them, like whole wings or feathers, were arranged on top of a hat. Some hats were made to look like bird nests and the whole bird was placed in its nest. As Jennifer Price, the author of *Flight Maps*, tells us, this trend went in and out of vogue until it became quite common in the latter nineteenth century to the point where Frank Chapman recorded forty different species of birds on downtown Manhattan just on women's hats.⁵³⁸ Local Audubon Societies fought hard against the milliners and the feather trade by encouraging women not to wear the barbaric bird hats.⁵³⁹ Wright played a part of these larger national conservation issues.

⁵³⁷ The Audubon Society promoted children's involvement with the formation of Junior Audubon societies and the introduction of Bird Day to be celebrated in the schools.

⁵³⁸ Price, "When Women Were Women, Men Were Men, and Birds Were Hats."

⁵³⁹ An important book regarding the grassroots and legislative movements against milliners in both the United States and England is Robin W. Doughty, *Feather Fashions and Bird Preservation: A Study in Nature Protection* (Berkeley: University

Wright's first effort to spread her ideas about conservation was through her books. As previously mentioned, the purpose of these books was to educate the reader about the natural world in order to cultivate a sympathetic understanding toward it. In *Gray Lady and the Birds* Wright undertook to convince her young readers not to collect dead birds, but also to convince them of the need for scientific collections:

We should not learn enough from such a bird to in any way make up for taking its life; it would be both wasteful and against the law. So we must be content to believe what the Wise Men say, who must study the dead birds in order to preserve the scientific knowledge of their structure and keep them in public museums, that they may teach the world how wonderful a thing bird-life is, and show us that we must do all we can to protect it.⁵⁴⁰

Wright hoped that children would be more interested in learning from and about living birds. However, she still maintained that scientific collections were an important part of the effort to protect birds because the more the "Wise Men", or the scientists, learned about birds and bird life, the better prepared they were to help with the conservation effort. She also advocated *public* museums, under the direction of the "Wise Men" and for the good of the people, rather than private home collections. Science was valuable because it aided in the expansion of knowledge, but it had its limitations.

For the Wise Men know very well that---
You cannot with a scalpel find the poet's soul,

of California Press, 1975). And for a discussion of the bird conservation movement and its relationship to the members and organizations of the professional ornithological community, see Barrow, *A Passion for Birds*.

⁵⁴⁰ Wright, *Gray Lady and the Birds*, xiv.

Nor yet the wild bird's song!⁵⁴¹

The methods of science, the fine dissection of the natural world with the exactness and sharpness of a scalpel, could never lead to an understanding of the spirit of nature. And it was the spirit, or the soul, of nature that Wright wanted students to know.

Books were not the only tool Wright used to spread her conservation message. She regularly contributed articles to *Bird Lore*, the official organ of the Audubon Societies. She began her affiliation with the magazine in 1899 when she assumed the position of editor of the Audubon Department, a position she held until 1906. In her capacity as editor for this section, she wrote about the conservation efforts of the society. The dual purpose of these articles was both informational and motivational. Through these vignettes, she kept the members abreast of the legal and practical issues that the society was confronting, including the millenary trade, conservation laws, and reservations. In 1900 she addressed the issue of whether or not local Audubon societies should have fees for membership. She argued that the fees were essential for the development of education materials for nature-study in and out of the classroom. She encouraged her fellow members to “face this issue! Do not spend so much time in crawling around it and nibbling the edges.”⁵⁴² The following year she

⁵⁴¹ Ibid.

⁵⁴² Mabel Osgood Wright, "Fees and Pledges," *Bird Lore* 2, no. 2 (April 1900): 63-65, 65.

took a stand against the milliners by writing a piece against bird decorated hats. She implored her readers to take action:

Every well-dressed, well-groomed woman who buys several changes of head gear a year can exert a positive influence upon her milliner, if she is so minded, and by appearing elegantly charming in bonnets devoid of the forbidden feathers, do more to persuade the milliner to drop them from her stock than by the most logical war of words.⁵⁴³

And in 1903, she advocated “a new form of expression, the Literature of Bird Protection.”⁵⁴⁴ This new form of writing “goes far beyond the mere tabulation of facts, and thus wins for itself a permanent place that its statistics alone could not obtain for it.”⁵⁴⁵ Wright was prolific in this role, authoring no less than thirty articles and Educational Leaflets for use in the classroom, before the end of her term in 1910. After 1910, she continued her affiliation as Contributing Editor until her death in 1934, occasionally contributing articles for the magazine

Wright was also a participant in select organizations that were dedicated to the bird conservation movement. In 1895, just two years after the inauguration of the organization at a meeting at the American Museum of Natural History, she received an invitation to become an associate member of the American Ornithologist’s Union, a fledgling national organization that promoted the scientific study of birds and bird conservation. According to Mark Barrow, the A.O.U. sought the best of both worlds

⁵⁴³ Mabel Osgood Wright, "Hats!" *Bird Lore* 3 (1901): 41-41, 40.

⁵⁴⁴ Mabel Osgood Wright, "The Literature of Bird Protection," *Bird Lore* 5 (1903): 137-138, 137.

⁵⁴⁵ Ibid.

by encouraging scientists to join and allowing non-scientists membership as well.⁵⁴⁶ The relatively small number of “active” members, mostly made up of scientists, controlled the organization, with the large number of “associate” members helping the organization financially. Wright was one of the early female members, alongside fellow nature writers and bird enthusiasts, Florence Merriam Bailey and Olive Thorne Miller. In 1901, the society created a new category of membership, the “elective” member, which represented a level between the “active” and “associate” members. This same year, Wright received an invitation to move to “elective” membership because of her success as an author and an advocate. This was quite a feat for Wright because very few women achieved this level of membership.

Wright, alongside some local bird enthusiasts, formed the Connecticut Audubon Society in 1898. She became first President and held the office until 1925. She was also active in the national society. She served on the board of directors of the National Audubon Society from 1905 to 1928.

In the last twenty years of Wright’s life, her conservation efforts shifted to include preservation with her already well-established education agenda. She still wrote an occasional article in this period, but her efforts, like her articles, focused on the creation of Birdcraft Sanctuary. Inspired by a dramatic performance of the play *Sanctuary* by Percy Mackaye, an anonymous donor declared to Wright “Connecticut

⁵⁴⁶ Barrow, *A Passion for Birds*. Despite the opposition of those who were denied “active” membership, the A.O.U. maintained its hierarchical nature, with scientists serving in its top positions.

must have a Sanctuary and you must make it".⁵⁴⁷ With the donor's gift of ten acres of land in Fairfield, Wright established the first nature sanctuary owned and operated by a State Audubon Society in 1914.

According to Wright, the philosophy of a nature sanctuary was different from that of a nature preserve. A nature preserve should be managed in order to be used by sportsmen, while the bird sanctuary "is an oasis in a desert of material things. In it the bird may lead its own life for that life's sake, and the joy of many of such lives overflows all arbitrary boundaries in its ethical benefits to the community and state."⁵⁴⁸ Primarily, Birdcraft Sanctuary was designed to benefit the birds, complete with a cat-proof fence about the perimeter, and numerous sources of water, food, and shelter.⁵⁴⁹ Even though the sanctuary was designed for the birds, humans played important roles there as well. A bungalow, with a pergola porch, was built on the property for a caretaker to reside in; this small house also had a meeting room for the Connecticut Audubon Society. In addition, later in the year, a Museum was also built on the property and filled with stuffed birds. Wright had learned from conducting her Bird Study group that people learn the distinguishing characteristics of the birds first

⁵⁴⁷ Mabel Osgood Wright, "The Making of Birdcraft Sanctuary," *Bird Lore* 17, no. 4 (1915): 264. The anonymous donor was later identified as Annie Burr Jennings, a philanthropist and friend of the Wrights. The land that was donated was just down the road from Wright's Connecticut home.

⁵⁴⁸ *Ibid.*, 263.

⁵⁴⁹ Although Wright opposed the senseless slaughter of songbirds, she did not object to killing cats or any other predator or nuisance animal that breached the security of the Sanctuary.

by looking at stuffed specimens or bird charts. After the students had completed their preliminary work in the museum, they would head out onto the trails to look at nature first-hand.

In addition to knowledge, the visitor to the sanctuary had the opportunity to escape the fast-paced world and experience the rejuvenating effects of nature. Wright wrote:

Ours, as its name implies, is a sanctuary for birds, but it is no less one for beasts and humans who crave a place to rest, watch and wait surrounded by the philosophy of nature. That the place contains a mystic *something*, as call to the wild that draws the wild things to it, even before they have experienced its comfort of food and shelter, is a fact beyond dispute.⁵⁵⁰

Even today, Birdcraft Sanctuary draws visitors seeking to learn about birds and those seeking to take a relaxing walk along its trails.

Carolyn Merchant has argued that women were involved in the Progressive conservation movement because they were concerned with protecting more than the environment: what was at stake was a traditional way of life where women dominated the domestic sphere.⁵⁵¹ By conserving nature, women were conserving their traditional middle-class lifestyles as the caretakers of the home and the children;

⁵⁵⁰ Mabel Osgood Wright, "The Philosophy of a Sanctuary," *Bird Lore* 31, no. 5 (1929): 315. Original emphasis. The sad irony is that today, some ninety-two years following the establishment of Birdcraft Sanctuary, the original land has shrunk and has been intersected by Interstate 95 which connects New York City to coastal Connecticut. Today the sound of the birds is overwhelmed by the traffic from the nearby highway and the scenery from part of the sanctuary includes a McDonald's arch.

⁵⁵¹ Carolyn Merchant, "Women of the Progressive Conservation Movement: 1900-1916," *Environmental Review* 8, no. 1 (1984).

in this way nature was seen as an extension of the home. Women were the conservers of the home and the extension of conservation to include that of the surrounding land ensured the “conservation of true womanhood.”⁵⁵² Women were responsible for the future of humanity by giving life to it and they must also, according to Merchant, “care for the product of life” by ensuring that there is fresh air and clean forests for them to enjoy.⁵⁵³ Conservation was therefore a practical ideal because it “primarily benefited human life,” for nature would have no value if future generations were not there to enjoy it.⁵⁵⁴ Further, in her discussion of Wright in the context of the Audubon movement, she notes that she worked within her sphere to appeal to women and children to stop the senseless slaughter of birds for ornamentation. It is true that Wright’s venues were within the domestic sphere, as a writer for women and children; even the establishment of Birdcraft sanctuary can be read as an attempt to conserve her home as she knew it as a young girl, complete with the living creatures. Wright accepted her father’s definition of “true womanhood” as espoused in *The Hearth-Stone*. She married and did not pursue a professional field that took her outside of the home. Instead, her domain was the home. She worked to conserve the home, including the land surrounding it and the experiences she had there. In addition, she cultivated the next generation in order to ensure that there was nature for them to enjoy and to prepare them to enjoy it. Wright was motivated by the same

⁵⁵² Ibid., 74.

⁵⁵³ Ibid.

⁵⁵⁴ Ibid.

things that most women involved in conservation were, in part because she wanted the next generation to benefit from a kinship with nature, but mostly because she loved her childhood so much that she wanted to conserve it—on paper and in reality.

Wright worked hard to spread her conservation message with the zeal of a preacher. Her sense of responsibility toward nature in general, and birds specifically, went deeper than the simple fact that she believed that she was more attuned to nature than others. Of this responsibility she said:

All the more is this just and right, because we ourselves in our advancement are the main cause of their need of this protection, for as man increases, possesses, builds, and overflows the earth, so do these “kindred of the wild” dwindle and silently disappear.⁵⁵⁵

Through her teaching and conservation efforts, Wright was trying to right a wrong that she felt humanity had inflicted.

⁵⁵⁵ Wright, *Gray Lady and the Birds*, xi.

“Nature as a Field for Fiction”

“Nature as a Field for Fiction”

In 1903, Wright wrote an article for *The Critic* in which she argued that due to the artificial conditions created by the modern world, Americans were turning to the “Life Outdoors” for comfort and rejuvenation.⁵⁵⁶ Further, in her view this focus on the out-of-doors affected the literature of the day. The 1890s saw the birth of “‘The How to Know Nature’ school of writers” who responded to the paucity of practical and well-written books to teach the layperson about the natural world.⁵⁵⁷ Previous generations of nature lovers had had to decipher the words of the experts and their works were never direct, nor accessible. According to Wright, the introduction of this new school of nature writers opened the doors for non-scientists to speak with authority about nature.

“‘The How to Know Nature’ school of writers” possessed an autonomy that freed them from convention and “joined their knowledge with the spontaneous freedom of expression belonging to the non-scientific.”⁵⁵⁸ These authors were able to write about the same material that scientists were addressing, and with the authority of observation, but with more latitude. They were able to construct what

⁵⁵⁶ Mabel Osgood Wright, "Life Outdoors and Its Effect Upon Literature," *The Critic* 42 (April 1903): 308-311, 310. American appreciation of the “Life Outdoors” was possible in the final decade of the twentieth century because humans were no longer fearing or struggling with nature as they had in previous generations, and Americans began to witness a new era of leisure and wealth that allowed them extra time to commune with nature.

⁵⁵⁷ Ibid.

⁵⁵⁸ Ibid.

Wright called “fact-fantasies” that bent the conventions of scientific discourse.⁵⁵⁹

This freedom of approach was needed then more than ever as scientists were working to establish their authority regarding questions of natural knowledge and the rules of discourse about nature.

As science professionalized, its supporters sought to establish its method as the only way to gain knowledge about the natural world and they sought to promote the viewpoint that nature was a source of rational knowledge and not a source of emotional experiences or fanciful knowledge. As Eileen Crist has demonstrated, scientists also sought a specialized language for the description of animal behavior that distanced the observer from the subject of nature which furthered their claim of objectivity.⁵⁶⁰ This language allowed animals to “appear blind to the meaning and significance of their activities and interactions, and the production of their behaviors is depicted as determined by forces beyond their control and comprehension.”⁵⁶¹ In other words, this language denied animals’ conscious action and represented them as operating on pure instinct.

⁵⁵⁹ Ibid.

⁵⁶⁰ As discussed in chapter two, Eileen Crist, the author of *Images of Animals*, notes that some scientists at the turn of the century sought a language that was objective and treated the organisms of nature as “objects” in order to deny them any relationship with humanity and conscious action in nature. The alternative was to treat animals as “subjects,” which implied a connection between the human and animal world; it further implied that animals, like human, were able to consciously act. By employing language that separated themselves from the object of their study, scientists were able to claim objectivity. Crist, *Images of Animals: Anthropomorphism and Animal Mind*.

⁵⁶¹ Ibid., 5.

Although Wright respected science, she did not believe it to be the only way to understand and represent the natural world. In fact, she made her case for non-scientists speaking with authority about nature and praised the “revolt that does away with the hard and fast scientific boundaries and bids all welcome who have anything to say and the words wherein to say it.”⁵⁶² This revolt was deemed necessary because of the forceful nature by which scientists were asserting their dominion over all questions of nature. If other viewpoints were to be respected there would need to be revolutionary change.

Wright believed that connections existed between the human and the natural world that allowed humans to be in sympathy with nature, and that this sympathy resulted in a deeper, emotional understanding of nature. While most scientists would have to acknowledge that on some level they experienced a sympathetic relationship with the subject of their study or else they would not be drawn into the study of it, the language of scientific discourse and the method of scientific objectivity did not allow for this type of proximity to the subject of study to be acknowledged. To admit sympathy would be to compromise the objective status of the knowledge that was produced. For Wright and others in the ‘How to Know Nature’ school, sympathy was a tool used to cultivate the proximity that professional scientists wanted to avoid. Through sympathy, Wright sought to instill a morality toward the natural world in her young readers. Science, according to Wright, did not acknowledge the connections

⁵⁶² Wright, "Life Outdoors and Its Effect Upon Literature," 310.

between the two worlds, nor did it seek to teach ethics. Moreover, science was too rigid and did not allow for imagination and sentiment.

Wright's attitude was apparent from the outset of her career. In her first book, *The Friendship of Nature*, she wrote:

Nowadays science teaches the places of the stars by lines and angles, but to those who when children studied the old black charts, with the strange figures of mythology enclosing their component stars outlined in white, the heavens were more vitally peopled. We cannot all be positive scientists, and heaven help the world if we could be! The spirit of things would be dried away by letter, and the affections ranged in systems about material suns.⁵⁶³

Science, according to Wright, created a rigid vision of nature, and one that did not allow nature to be experienced emotionally or viewed sympathetically.

While science was valuable to Wright, much more was needed than scientific knowledge because of the toll that modern industrial life had taken on Americans.

Wright pleaded:

The present great awakening of the people facing eastward and watching the rising sun is of course a reaction from the intense contraction and brain worry of city life, a striving against artificial conditions, and the wonderful annual pilgrimage to the Life Outdoors is a movement of the greatest importance to all America to-day in securing perpetuity of the race through the betterment of physical health and mental energy.

That this crusade should have its impulse and rise at the time of the greatest financial prosperity and consequently highest nervous tension that the country has ever known, is fresh proof of the continued presence of the adjusting balance wheel. It is not a "going back to Nature" as it is often called, for any backward movement is to be deplored; not a relapse to insensate savagery, but a stepping forward, with keen understanding eyes and outstretched hands, to meet Nature upon the higher plane of the desire of perfect mental and physical understanding.⁵⁶⁴

⁵⁶³ Wright and Philippon, *The Friendship of Nature*.

⁵⁶⁴ Wright, "Life Outdoors and Its Effect Upon Literature," 309-310.

Nature writers thus took upon themselves the responsibility for the moral, mental and physical uplifting of the modern human by bringing them to nature.

As a result of the interest in the out-of-doors, there was a proliferation of nature books. The problem, according to Wright, with this new flood of books was that there were no authorities in nature study to separate the “sheep from goats”; in other words, there were no judges to determine for an unknowing public what information was truthful and what was not.⁵⁶⁵ The latitude created due to the lack of critical evaluation led to a wealth of what Wright called “fact-fantasies,” or books that bent the rules of nature in order to tell an interesting story. On the one hand, these “fact-fantasies” represented a form of literature that could be both factual and enjoyable and drew more people to read nature stories. On the other hand, this freedom led to abuses by some authors who wrote things about nature which didn’t correspond with known scientific facts.

Wright’s comments in the April 1903 article were meant as a direct response to the nature-faker controversy, which had heated up in the previous month in the *Atlantic Monthly*. At the heart of the nature-faker controversy was a debate about *how* nature should be portrayed. John Burroughs, one of the most famous nature-writers of the turn of the century, criticized authors such as William J. Long, Jack London, Ernest Thompson Seton, and Charles C. D. Roberts regarding what he

⁵⁶⁵ Ibid., 310. Wright suggested that the Publishers’ Association should take the lead in encouraging qualified scholars to take up the literary criticism of nature books in order to bring some order and authority to this profession.

considered to be their fantastic portrayals of nature. Burroughs believed that representations of nature should be true to how nature actually acts and any distortions due to sentimentality or anthropomorphization should be avoided. Critics considered Wright to fit within the same category as other well-known nature writers of her day, including John Burroughs, who took a definite stance against nature-faking.⁵⁶⁶ But although she appreciated the overall argument regarding the need for accuracy, Wright did not agree with Burroughs on all points.

Burroughs' objection, which was shared by others who spoke out against nature-faking, was that, despite claims of veracity on the part of the authors, the natural history portrayed was not in line with the facts of nature as determined by scientific authority. Either the information had not been verified by multiple observations in the field or else nature was falsely anthropomorphized, with animals being made to think and act in the way a human might. Wright was adamant that nature stories should be based in scientific fact and she strove for scientific validity in her own work; as she noted at the opening of *Tommy-Anne and the Three Hearts* "[t]he lives and habits of plants and animals, however fancifully treated in this book, are in strict accordance with the known facts of their existence."⁵⁶⁷ But Wright believed that the critics of the nature fakers, including Burroughs, had been too harsh in their evaluation because to deny authors the ability to infuse fancy and imagination

⁵⁶⁶ John Wright Buckham, "The Modern School of Nature Interpretation," *The Book Buyer: A Review and Record of Current Literature* 20 (1900): 108-113.

⁵⁶⁷ Wright, *Tommy-Anne and the Three Hearts*.

into their nature writing was to risk not getting readers emotionally involved with their subjects. Specifically, Wright allowed for a more subjective language when describing the life histories and behaviors of plants and animals, although the actual facts represented must be in line with the reality of nature. She allowed animals, and even plants, to be imbued with human characteristics, language, and emotions. By balancing the factual and fanciful treatment of the natural elements, she created a realistic portrayal of nature that a reader could learn from, but also it encouraged the reader to relate to nature. Her efforts for a more reader-friendly representation of nature stemmed from her fear that if people, especially children, were not encouraged to relate to nature or to develop a sympathetic bond with it, they would be less inclined to treat nature ethically.

Wright published all but one of her books for children, several of which contained fanciful elements such as anthropomorphized characters and in some cases unrealistic plot lines, before the end of 1903.⁵⁶⁸ So when Burroughs criticized fanciful tales of unrealistic happenings in the natural world, Wright had a stake in the controversy. She weighed in with criticisms for both sides. First, she criticized the accused nature-fakers for their “solemn guarantee of absolute veracity” of events they

⁵⁶⁸ Of Wright’s originally authored books, only *Gray Lady and the Birds* was published after 1903. Her compilation readers which were excerpted from *Tommy-Anne and the Three Hearts*, *Wabeno the Magician*, *Citizen Bird*, and *Four-footed Americans*, were published in 1904. Wright, *Stories of Birds and Beasts*, Wright, *Stories of Earth and Sky*, Wright, *Stories of Plants and Animals*.

recounted that appeared to be clearly ridiculous to proper natural historians.⁵⁶⁹ Yet, she also could not completely accept Burroughs' criticisms of the infusion of fancy into nature writing. She argued that Burroughs "made one grave error, that of taking the point of view of the quasi scientific observer of nature's methods, instead of that of the naturalist facing a rather new literary phase where *nature was seized as a field for fiction*."⁵⁷⁰ In another influential article, she further argued that "we should hesitate to brand deductions as untrue because they are not within the range of our own experience."⁵⁷¹ She compared animal stories to human fiction and noted that:

The difference between the creator of the hero of human fiction and the authentic record of the doings of a specific individual that constitutes biography lies in this. The hero of fiction is in more or less degree a composite character, but all his attributes must be of course in accord with the known qualities of man, even though mixed in proportions to suit the author. This latter point some of our creators of this new type of fiction forget, and insist not only upon the introduction of unprovable characteristics for their animal heroes, that do not add but rather detract from the strength of the situations, no matter in what light that they are considered, but insist that the composite be considered as an individual pure and simple, whose comings, goings, and thoughts they have personally (or by proxy) watched and fathomed.

This position is foolish from any standpoint, for those who love a good human story, both for its characterizations and literary expression, do not care a penny-worth whether the hero is an actual man known to the author or a creature of his fancy, so long as a rational and convincing probability is

⁵⁶⁹ Wright, "Nature as a Field for Fiction: Some New Books on Natural History and Outdoor Life Dealing with Fact and Fancy," *The New York Times Book Review*, 9 December 1905, 872. The essay was later published in a collection of articles that made up the nature faker debate; Ralph H. Lutts, *The Wild Animal Story, Animals, Culture, and Society* (Philadelphia: Temple University Press, 1998).

⁵⁷⁰ Wright, "Nature as a Field for Fiction," 872. The emphasis is mine.

⁵⁷¹ Wright, "Life Outdoors and Its Effect Upon Literature," 311.

maintained. It is when the authors in this new field insist that they are not only telling “the truth and nothing but the truth,” which, moreover, they have personally touched, tasted, swallowed, and digested, that a halt must be called.⁵⁷²

Thus, there was a limit to the treatment of organisms fancifully; the characteristics presented must be true as a general matter, if perhaps, not in regard to specifics.

Wright believed that Burroughs, in trying to make a legitimate point, went too far in his criticisms of fanciful natural history. In fact, Burroughs privately acknowledged that he might have gone to the other extreme, in a letter to Wright. He wrote:

I am sorry you do not like my later writings. I know you are upon the Long side, which means the wrong side, in the current National Controversy. I am quite sure I am only in quest of the truth in these matters, & I know I am in accord with all the leading [word unclear] psychologists of the world, yet it may easily be that the Long School of writers have irritated me so that I have gone to the other extreme. I am sure I don't know. When a man sets out to maintain a thesis I suppose he is in danger of falling into the attorney habit & losing sight of the other side.⁵⁷³

Wright had a great respect for Burroughs, who she dubbed the “recording secretary” of the new school of nature writing.⁵⁷⁴ But she would find herself on the opposite side of the fence from him on this issue more than once. In a 1906 review of his book *Ways of Nature* she reprimanded Burroughs in the highly visible venue of the *New*

⁵⁷² Wright, "Nature as a Field for Fiction," 872. The “Long side” referred to William J. Long, one of the nature authors whom Burroughs was criticizing.

⁵⁷³ John Burroughs to Mabel Osgood Wright, 22 June 1907 from West Park, New York, Mabel Osgood Wright Autograph Album, Fairfield Public Library, Fairfield, CT.

⁵⁷⁴ Wright, "Life Outdoors and Its Effect Upon Literature."

York Times Saturday Review of Books for checking his logic at the door on the issue of his tolerance toward other approaches of representing nature. In the Preface of *Ways of Nature* Burroughs admitted that the nature-faker controversy had a profound effect on the way he looked at the issue of animal intelligence. He claimed that:

Heretofore I have made the most of every gleam of intelligence of bird or four-footed beast that came under my observation, often, I fancy, making too much of it, and giving the wild creatures credit for more “sense” than they really possessed. The nature lover is always tempted to do this very thing; his tendency is to humanize the wild life about him, and to read his own traits and moods into whatever he looks upon. I have never consciously done this myself, at least to the extent of willfully misleading my reader. But some of our later nature writers have been guilty of this fault, and have so grossly exaggerated and misrepresented the every-day wild life of our fields and woods that their example has caused a strong reaction to take place in my own mind, and has led me to set about examining the whole subject of animal life and instinct in a way I have never done before.⁵⁷⁵

In her review Wright quoted the above paragraph and admonished Burroughs:

“Personally, I have no sympathy with the fables composed by the chief offender of the School of the Long Bow, while one of his most serious offenses seems to me to be his lack of logic, but in this respect the present volume proves Burroughs equally lacking.”⁵⁷⁶ Burroughs was adamant in his demand for nothing but scientific truth in natural history writing:

⁵⁷⁵ John Burroughs, *Ways of Nature* (Boston: Houghton, Mifflin and Company, 1905), v. The nature writers that Burroughs referred to are the same he criticized in his 1903 *Atlantic Monthly* article.

⁵⁷⁶ Mabel Osgood Wright, "Maurice Maeterlinck and John Burroughs," *The New York Times Saturday Review of Books*, 3 February 1906, BR64. The “School of the Long Bow” referred to the fantastic tales of William J. Long and others who wrote without attention to veracity in her eyes.

Unadulterated, unsweetened observations are what the real nature-lover craves. No man can invent incidents and traits as interesting as the reality. Then, to know that a thing is true gives it such a savor! The truth—how we do crave the truth! We cannot feed our minds on simulacra any more than we can our bodies. Do assure us that the thing you tell is true. If you must counterfeit the truth, do it so deftly that we shall never detect you. But in natural history there is no need to counterfeit the truth; the reality always suffices, if you have the eyes to see it and the ears to hear it.⁵⁷⁷

Wright appealed for a balanced approach toward nature interpretation that would allow more flexibility in representations of nature. She also wanted space for a style of writing that would allow for “reverie” of nature.⁵⁷⁸ She ends the paragraph with the following judgment: “The conclusion to be drawn therefore is that the plane of truth is on the side of neither, but to be found half way between the statements of the exaggerator and the denier!”⁵⁷⁹

Wright took issue with a number of Burroughs’ statements that would deny animals any abilities beyond instinct, including thought, reasoning, intelligence, and language. These are the same issues that the nature faker debate, three years earlier, hinged upon, and Burroughs had not budged an inch. After assaulting quotation after quotation, Wright, exasperated, asked: “What is the difficulty with this one-time natural philosopher? Has the cloak of dogged materialism, donned as a protection against the changeful temperature of too many emotions, proved too heavy—or is it the coming of the inelastic period of blood vessel and brain that Osler has been

⁵⁷⁷ Burroughs, *Ways of Nature*, 15.

⁵⁷⁸ Wright, "Maurice Maeterlinck and John Burroughs."

⁵⁷⁹ Ibid.

condemned for proclaiming in too distinct language? No, it is perhaps only a mistake in judgment.”⁵⁸⁰ Wright not only viewed the attacks of Burroughs and others as the unwavering dogma of science, but the consequences were devastating for those who used fancy to motivate their audiences into action. Wright created a place for the cautious fanciful treatment of plants and animals in nature stories for one main reason: it encouraged the young reader to form a sympathetic bond with the organism in the story, and by extension, the organism in the field. Wright knew, from her own experience as a child, that children did not try to rationalize nature or understand it solely through reason. Instead, children could also experience nature and understand it through that experience. Walt Whitman, a contemporary poet, espoused this brand of learning in “There Was A Child Went Forth.” Whitman wrote:

There was a child went forth every day,
And the first object he look'd upon, that object he became,
And that object became part of him for the day
or a certain part of the day,
Or for many years or stretching cycles of years.

⁵⁸⁰ Ibid. Their early correspondence had been cordial; her Autograph Album contains a letter from Burroughs in 1895 thanking her for his copy of *Birdcraft* which he called a “handy and reliable book”. But following this review their correspondence became more heated. In 1907, in response to a letter from Wright in which she questioned a statement he made about when barn swallows migrated, you can sense Burroughs’ frustration: “My books are mainly written for the latitudes of N.Y. & N. England & I have never known the barn swallows to linger in this part of the country later than early Sept. If they remain as late as early Oct. it is news to me. I made inquiry the other day of President Roosevelt while walking with him at Sagamore Hill, what time the swallows left him (think of putting such a question to a President of the United States!) He paused a moment & said “Early Sept.” ...If they stay with you as late as Oct. it seems to me it must be entirely exceptional.” John Burroughs to Mabel Osgood Wright, 22 June 1907 from West Park, New York, Mabel Osgood Wright Autograph Album, Fairfield Public Library, Fairfield, CT.

The early lilacs became part of this child,
And grass and white and red morning-glories,
 and white and red clover, and the song of the phoebe-bird,
And the Third-month lambs and the sow's pink-faint litter,
 and the mare's foal and the cow's calf,
And the noisy brood of the barnyard or by the mire of the pond-side,
And the fish suspending themselves so curiously below there,
 and the beautiful curious liquid,
And the water-plants with their graceful flat heads,
 all became part of him.⁵⁸¹

Whitman's child learned about the world around it by experiencing it. And through the child's experience they formed a sympathetic understanding and bond with the world around them. Wright, too, went out into nature as a child, experienced it and developed a sympathetic bond with nature through the experience. She did not only rationalize nature, though she did learn about the objects of nature and their functions, instead she also understood nature through an emotional connection. Whitman's poem and Wright's experience indicated that children could learn through a sympathetic connection. Further, a child in sympathy with the world around them would care about its fate and be willing to act to conserve it.

Imagination and Sympathy in "Tommy-Anne and the Three Hearts" and "Wabeno the Magician"

Because of Wright's commitment to her conservation agenda and her desire to enlist children in this program, she sought to educate them about birds and the need for bird conservation. However, she was not a scientist and did not want children to

⁵⁸¹ Walt Whitman, *The Selected Poems of Walt Whitman* (New York: Walter J. Black, 1942), 305.

adhere to rigid scientific standards of scientific investigation and understanding. Instead, she tapped into children's love of imaginative stories and animal tales to provide children with tales that they would relish. Wright used "nature as a field for fiction" in many of her novels. In most stories, the make-believe elements encompassed the human story, in terms of human fictional dramas and love stories. But in two of her children's books the fiction steals into the story when the nature-bound characters appear. The two books, *Tommy-Anne and the Three Hearts* and its sequel, *Wabeno the Magician*, were her first and third books written exclusively for children.⁵⁸² Though not as popular as her *Birdcraft*, which went through twelve editions, these works were reprinted four times, so they were widely circulated. They were also well respected among critics; one reviewer in *The Critic* claimed that "[o]ne Tommy-Anne is worth a whole shelf of the average juvenile literature" because Wright's genuine love of nature shone through the text.⁵⁸³

The stories encompassed the world of a young girl, Tommy-Anne, who would rather be outdoors than inside and wished she could be and act more like boys.⁵⁸⁴ Tommy was a nickname for tomboy and Anne was short for Diana, the young

⁵⁸² Wright, *Tommy-Anne and the Three Hearts*, and Wright, *Wabeno the Magician* ".

⁵⁸³ "Mabel Osgood Wright," *The Critic*, 21 November 1896, 319.

⁵⁸⁴ Wright herself admitted that as a young girl she wished to be a boy, in part to please her father who expected her to be a young Samuel. As a child she would much rather have spent time outdoors than inside where she would be expected to act like a young lady. Despite the fact that she came to accept her womanhood and her role in this capacity, she admitted that she never had the patience for social pretense and couldn't really understand women. Wright, *My New York*.

subject's real name.⁵⁸⁵ The two names were combined by her father and she became known as Tommy-Anne until the end of the first book when her brother was born and Diana gave him the "Tommy" half of her name. Her family, including her father, mother, aunt Prue, and rabbit-hound Waddles had recently moved to a home in the country.⁵⁸⁶ Tommy-Anne was curious about the natural world around her and frequently went to her father, who was a knowledgeable naturalist, with questions. Her father would patiently answer the "*whys* and *whats* and *because*s" that she came up with; Tommy-Anne was deeply appreciative because no one else had the time to answer. His answers were always provided in an informal manner, leaving her to explore on her own. This lack of formality was curious because her father did give formal naturalist lessons to a young boy, Obi, who served as her surrogate teacher.

⁵⁸⁵ Once again, Wright was autobiographical here in her selection of the main character's name. Tommy was actually the childhood nickname that was given to her by her father. Tommy-Anne's real name, Diana, was perhaps inspired by a cameo that her father gave her mother when they became engaged; it was engraved with a picture of the goddess Diana. In Roman mythology Diana was the goddess of the hunt and was considered the protector of animals and children. Ibid.

⁵⁸⁶ Clearly she drew on her personal experience with the characters and the setting of the story. Tommy-Anne's mother barely appeared in this story (we find out at the end that it is because she is on bed rest, preparing for the imminent birth of her son) even though Wright dedicated the book to her own mother. Not much is known about Wright's relationship with her mother. In her autobiography she portrayed her mother as graceful, witty, and modest; a woman with a pure singing voice, proper New England refinement, and a Roman nose. It was obvious that Wright loved her mother, but it was her father who was the greatest influence in her life. Perhaps Tommy-Anne's mother's absence was simply a literary tool because her baby brother was important to the second half of the story. But Wright circumvents the absence in an interesting way; Tommy-Anne referred to her parents as "father-mother". When asked who she loved best, her father or her mother, Tommy-Anne indignantly replied: "Which? They aren't a *which*; father-mother is the same person!"

While Obi received formal natural history training, Tommy-Anne was taking sewing lessons from her mother (much to her consternation because these lessons took place inside!). This is in line with Wright's assumptions about women's roles in disseminating natural knowledge, ideas that were again influenced by her father; women could be teachers and informal learners, but never experts or trained scientists.

One day Tommy-Anne was in a nearby field with Waddles when something strange and wonderful occurred. While sitting at the foot of an old oak tree, Tommy-Anne made the wish that she could understand the words of the birds that were singing in the branches above her so she could ask them questions about their habits. She received an unexpected reply:

“I wish I knew why,” sighed Tommy-Anne, looking up through the branches.

“Why what?” said a Voice close beside her.

“Why everything,” she replied, looking about, expecting to see the owner of the voice.⁵⁸⁷

The voice was not coming from a person standing nearby, but instead it was issuing from the great Oak tree that she was sitting beneath. Tommy-Anne pressed her ear to the tree to listen. The voice in the tree asked her again to articulate what she wanted to know and Tommy-Anne replied:

“I want to know so many things,” she continued. “Everything about the garden and the woods, the water and the sky. If the flowers are sorry that they cannot move about, and what they think of; where the birds spend the winter, and why they sing before they go to sleep. I want to know what all the noises are, that I hear in the woods when it is dark; why the rain does not put

⁵⁸⁷ Wright, *Tommy-Anne and the Three Hearts*, 4-5.

the fireflies” lights out, and where the butterflies come from. Then there is the river too; it always says the same thing when it tumbles over the dead willow below the bridge; it seems as if I *must* understand it.”⁵⁸⁸

The voice in the tree responded:

“If you wish to know so many things, Tommy-Anne,” said the Voice, “you must go to Whyland and see for yourself, for there everything tells its own story, and each one sees and hears what he most desires.”⁵⁸⁹

When Tommy-Anne questioned whether Whyland was a real place or an imaginative fairyland, the voice said:

“No, Tommy-Anne; the people in Whyland are real people, though their speech is so strange to the House People that they think it fairy talk. Whyland covers the whole earth; and though I am a ruler in it, yet there are different interpreters to teach its languages, for no one can learn them all.”

“You are a thoughtful child (the heedless can never learn even one of these languages), so you may learn the speech of the nearest corner and the ways of its people, and see them through the Magic Spectacles, that give both sight and hearing to those who wear them.”

“Magic Spectacles?”

“Yes, surely; for no one can more than *peep* into Whyland without them, and then it seems a dreary place—all facts and figures like the multiplication table.”

“In Whyland the talk I would teach you is of the NEARBY! The speech of the small river; of the Fox that drinks of it; of the Water Snake that spreads its dark fold on the overhanging grape-vine; of the Red Squirrel in the corn-crib; of the Mole tunneling the garden path; of the Woodchuck slinking through the field; of the Coon in his tree hollow; and the Wild Cat that creeps to the woods edge at the first snowfall... You shall learn the language of the flowers that you tie for a bouquet, of the ferns that live in the deep woods, and are so shy that they speak only to the mosses; you shall hear the tales that the old trees tell, as they rock to and fro crooning. The brotherhood that I may teach you of, is of the Beehive and the Little Beasts Near Home.”

“What must I take with me to Whyland, dear Tree Man?” asked Tommy-Anne.

⁵⁸⁸ Ibid., 9. Original emphasis.

⁵⁸⁹ Ibid.

“You need not carry anything but your mind; for without that you cannot see even through the Magic Spectacles.”⁵⁹⁰

The title Wright chose for her first children’s book was a play on a popular children’s book published just six years prior, by British author Arabella Buckley, entitled *Through Magic Glasses*.⁵⁹¹ In her book, Buckley takes her readers into the world of nature that can only be seen through the “magic glasses” of the modern scientist, in other words, telescopes, microscopes, spectroscopes, and the photographic camera. Wright’s magic glasses were different in the sense that they did not represent real lenses that a scientist would use, but they did allow the wearer to peer into the secrets of nature like Buckley’s instruments would. Wright asked her readers to suspend their beliefs and to imagine that trees could speak and that there was some magic means by which humans could communicate with the objects of nature.

“Dear Mr. Tree Man, please, please tell me your real name and what the Magic Spectacles are made of, and how long I may wear them. I thought that magic things were not really-trulies.”

“The House People have a habit of calling many things that they cannot understand with their every-day eyes, magical or untrue, but I cannot tell you how the Magic Spectacles are made until you have worn them. While you have them on *you* will understand the speech of beasts and birds, while *they* will not fear you; and you shall wear these spectacles until Christmas eve.”⁵⁹²

⁵⁹⁰ Ibid., 10-11.

⁵⁹¹ Arabella B. Buckley, *Through Magic Glasses and Other Lectures; a Sequel to the Fairyland of Science* (New York: Appleton, 1890).

⁵⁹² Wright, *Tommy-Anne and the Three Hearts*, 12. Original emphasis.

The spectacles were not glasses that Tommy-Anne could physically hold and put on her face; instead they were metaphorical lenses that heightened and modified her senses so she could hear and understand the language of the plants and animals in her surroundings. Unlike Buckley's "magic spectacles" which were the product of science, Tommy-Anne's "magic spectacles" worked two ways. Not only could Tommy-Anne understand the objects of nature, but she could be understood *by them*.

Wright revealed at the end of the book what the "Magic Spectacles" were made of:

"As to these spectacles, the glasses are made of TRUTH, but the settings are fashioned by a strange and precious metal that House People, for lack of a better word, call IMAGINATION!"⁵⁹³

Thus, imagination or fancy, in concert with the accepted lens of understanding, truth, was the means through which a child could truly understand the natural world. This was indicative of Wright's philosophy that a balance between the method of science and fancy, which was inherent in the child, was the best approach. She continued this blend throughout the story.

Wright moved between storytelling and recounting natural historical facts. She interjected bits of natural history effortlessly into the story. For example,

"I thought that some birds stayed mated all their lives, like people," said Tommy-Anne.

"So they do; a great many of us keep the same mate, but we woo her over again every spring; its safer never to take anything for granted, and it's much more fun besides. Some birds who can find food and lodging in nearly the same place at all seasons, or at most do not travel far, stay together all the year. Wawa knows a pair of Ospreys that have been mated for more than

⁵⁹³ Ibid., 321.

forty years, nesting on the same spot on a sea-island every summer. He told about it last year at the anniversary, and Ko-ko-ko-ho said he knew that it was true.”⁵⁹⁴

In this interchange Wright provided information about the mating habits of some birds. In another part of the book Wright discussed taxonomy, but without burdening the reader with Latin names; instead she explained the divisions between the organisms using simple language. She did not dismiss the use of Latin names, but instead acknowledged that “they are not easy to remember at first, yet they all have a meaning, and you must learn them before you can know how plants that look wholly unlike at the first glance may be first cousins.”⁵⁹⁵

Wright humanized her natural characters in order to make them more relatable to her audience. Through the aid of the “Magic Spectacles”, the nature-based characters used human language so they could converse with Tommy-Anne. Wright

⁵⁹⁴ Ibid., 76. Influenced by the Indian history in New England, and specifically in the Fairfield region, Wright used chiefly Algonquian words for the names of the animals in *Tommy-Anne and the Three Hearts* and *Wabeno the Magician*. The plants and animals learned their language from the Red Brothers, “the first men who lived with us here, and they understood our secrets, speaking our speech until our language mixed itself with theirs and theirs with ours, and we remember a word from this tribe, another from that.” Wawa translated as the Wild Goose and Ko-ko-ko-ho translated as the Horned Owl.

⁵⁹⁵ Ibid., 216-217. In her next two books, which also happened to be children’s books, *Citizen Bird* and *Four-footed Americans and their Kin*, she did include Latin classification terms to order organisms into Kingdom, Phylum, Subphylum, and Class to allow her to discuss the defining characteristics of animals in general, and vertebrates, birds and mammals specifically. Wright went to great pains not to let the language overwhelm the message, and the Latin names were introduced in the context of a very simple explanation. At the end of each of these books is a more elaborate classification table for the Classes Mammalia and Aves for those who wished to dive deeper into the terminology. Wright, *Four-Footed Americans and Their Kin*, and Wright and Coues, *Citizen Bird*.

also employed common human metaphors to draw parallels between humans and the natural entities she met. For example, through a conversation with a blade of grass, Tommy-Anne learned that “All plants have blood in them the same as the House People and other animals, only plant blood is very seldom red, but pale and greenish, and you call it sap.”⁵⁹⁶ By giving the objects of study a common language with the observer, and relating the functions and make-up of the objects of nature to things that young humans could understand, it created a common language so children could comprehend this unfamiliar world.

In order to help her readers relate to the objects of nature, Wright translated their relationships and emotions into familiar terms. The best example of this is the story of Robert of Lincoln and his first wife, Mrs. Lincoln.⁵⁹⁷ Tommy-Anne was listening to the local birds tell stories of their habits when the attention turned to Robert of Lincoln, or Bobolink, who relayed to Tommy-Anne the tragic story of how he saw his mate, who had gone missing, perched atop the head of one of the House People.

“Some House People were picking apples near by, but I did not fear them, and my heart leaped up, for close beside the fence I saw my mate sitting upon a brown nest-like thing, her wings upraised as if to fly to me, only she did not move.”

⁵⁹⁶ Wright, *Tommy-Anne and the Three Hearts*, 20.

⁵⁹⁷ One of Wright’s favorite poems as a girl was “Robert of Lincoln” by William Cullen Bryant. In her autobiography she related that one evening when the poet was visiting her father, and he was particularly friendly with her, she stood at his knee and bragged that she had almost memorized the poem in its entirety in an effort to impress him.

“I called; she did not answer. I flew down and touched her with my beak; she did not stir. I grasped her with my claws and gave her a shake, but she was bewitched and held fast to the brown straws upon which she was perching. . . . Meanwhile a House Child picked up the thing on which my mate was fastened and put it on her head. I saw that it was the leaf that they wear to keep the sun off, called a hat.”⁵⁹⁸

Wright’s purpose with this story is obvious and her sympathy for the plight of birds at the hands of milliners, who used bird feathers or whole birds, was clear.⁵⁹⁹ She went on, through the voice of the Bobolink, to chastise her human characters. Lincoln tells the reader that a “man, with a kindly face” walked up to the little girl and confronted her.

“Where did you get that bird, little daughter?” he asked. “I do not like to see you wearing such things. It is like a savage who decorates himself with the scalps from the heads of his neighbors.”

And the little House Child said, “The Butcher’s boy gave me the bird; he said it wasn’t a singer, but only a Reedbird.”

“Singer or not,” said the man, “it is a savage thing to wear. Suppose its mate were to see you now, how sorry he would feel. It may have lived in this very meadow. Do you think it is a good way to treat your guests?”

“Then the little girl felt very badly, and said that she ‘didn’t think.’ It seems to me that the miserable Puk-Wudjie, Did-Not-Think, has a great deal of influence with House People’.”⁶⁰⁰

“Then the man said, ‘I know that you are sorry. Take the poor bird from your hat, and we will bury it here.’ So they cut the thread that held her down and buried my mate in the meadow.”⁶⁰¹

⁵⁹⁸ Wright, *Tommy-Anne and the Three Hearts*, 87-89.

⁵⁹⁹ Wright addressed her concern over the use of feathers in the milliner trade on at least three occasions through her position as Editor of the Audubon Department in *Bird Lore*. Her approach was two-pronged: first, to encourage women not to buy hats that used any part of a bird, and to encourage their milliners to use other materials; and second, to enact State Legislation in order to discourage the plume trade and protect birds.

⁶⁰⁰ The Puk-Wudjies were little, mischievous spirits that Wright used to explain the bad habits of humans; among the Puk-Wudjie characters she introduced were: Did-Not-Think, Didn’t-Mean-To, and So-Sorry.

Tommy-Anne was greatly saddened by Robert of Lincoln's story; she placed her head in her hands and began to cry.

“Why, what's the matter? Are you sick?” cried Bob; ‘or perhaps you are sorry about my mate. It's very kind of you, I'm sure.”

“No,” said Tommy-Anne; “I'm not sick, but I *am* sorry. It was my hat your wife was sewed to. I never used to understand how birds and other animals felt, when I lived in the city. Of course I read about you all in books and knew in *words* that it is not nice to kill you, but somehow I did not *realize* you until I came here.”⁶⁰²

Wright believed that mere words were not enough to compel someone to treat nature with respect; an author must make an appeal to the emotional sensibilities of the reader. Wright used her anthropomorphized characters to tell the story from the point of view of the organisms, a perspective which humans rarely considered.

According to David Macleod in *The Age of the Child*, as the conception of childhood changed in the Progressive era to a distinct period characterized by primitivism and romanticism, children were allowed to indulge in imaginative stories and books.⁶⁰³ The imaginative elements of Wright's books made them popular with children. In 1903, the editors of *St. Nicholas*, a children's magazine, issued a request for readers to send in a list of their favorite outdoor books. A young boy from Brooklyn sent in a list that included three of Wright's books: *Tommy-Anne and the*

⁶⁰¹ Wright, *Tommy-Anne and the Three Hearts*, 88-89.

⁶⁰² *Ibid.*, 89. Original emphasis.

⁶⁰³ Macleod, *The Age of the Child*.

Three Hearts, Wabeno, the Magician, and Four-footed Americans.⁶⁰⁴ Two years later a Christian magazine issued a request for young readers to write in with the titles of their favorite books. There were a number of children who wrote in and one, from Corona, California, indicated that his favorite books were nature books and he particularly enjoyed *Tommy-Anne, Four-footed Americans, and Citizen Bird*.⁶⁰⁵ Adult reviewers also appreciated Wright's imaginative tales and found them appropriate for young readers. A reviewer for the *Chautauquan* claimed that *Tommy-Anne and the Three Hearts* "is in the garb of fairy lore, and the sweet natural style in which it is told imparts instruction of value to the growing mind as well as to the matured one. Only positive genius could weave such subtle webs of fancy, poetical in warp and woof, yet practical in knowledge."⁶⁰⁶ She was further praised for her fanciful approach by no less than Richard F. Outcault, creator of the Yellow Kid and Buster Brown cartoon characters. Outcault was a man of whimsy and, based on his characters, obviously in touch with the ways of children. In a private letter, Outcault created a Buster Brown cartoon in Wright's honor. Buster Brown and his dog, Tige, appeared on the outside of the text box which read:

RESOLVED!
That I thank you Mrs. Evan

⁶⁰⁴ "Books and Reading," *St. Nicholas; an Illustrated Magazine for Young Folks*, April 1903, 572.

⁶⁰⁵ "The Conversation Corner," *Congregationalist and Christian World*, 18 November 1905, 724.

⁶⁰⁶ "Review for 'Tommy-Anne and the Three Hearts'," *The Chautauquan; A Weekly Newsmagazine* December 1899, 331.

For just being alive, and I
Love all you people in your
Books and love Richard and
Ian and I hope you will write
Lots more books. Tige doesn't
Believe in fairy stories, but
They are just as true as lots
Of things grown folks believe
And the fairies are as real
As the old fairies in society
"What a lot of Tommy Rot there
Is around loose"
BUSTER BROWN⁶⁰⁷

Outcault signed the cartoon: "Buster speaks for is all."⁶⁰⁸ This cartoon was among some of Wright's most prized possessions and demonstrates that she was appreciated for her fancy and imagination by readers of all ages. It also indicated the tensions that existed within American culture over the value of fairy tales and imaginative stories: although ordinary readers thoroughly enjoyed and appreciated them, the science-sympathizers criticized the approach. That didn't stop other reviewers from positively evaluating the *Tommy-Anne* series and complimenting Wright's style, ability to communicate ideas effectively and interestingly, and her use of language in the anthropomorphization of her animal characters.⁶⁰⁹

⁶⁰⁷ R. F. Outcault to Mabel Osgood Wright, 8 November 1904, Mabel Osgood Wright Autograph Album, Fairfield Public Library, Fairfield, CT. Wright has written in her own hand across the top of the page that "Mrs Evan was the name I am known in "The Garden of a Commuter Wife."

⁶⁰⁸ Ibid.

⁶⁰⁹ The following were positive reviews of *Tommy-Anne and the Three Hearts* and *Wabeno the Magician*: "Review of 'Tommy-Anne and the Three Hearts'," *The Literary World*, 9 January 1897, 12, "Review of 'Tommy-Anne and the Three Hearts'," *Outlook*, 15 October 1898, 446, "Review of 'Wabeno the Magician',"

The *Tommy-Anne* series addressed a number of issues that were near and dear to Wright's heart, including conservation and the consequences for the interrelation between nature and humanity. The story of Robert of Lincoln spoke to another theme that Wright sought to illuminate—that humans had lost touch with nature and, as a result, made choices and judgments that were detrimental to the natural world. She hoped that humans would rethink their assumptions about nature if they realized the divide that now existed between humans and nature. In an effort to defend the much hated snake, Wright tried to demonstrate to the reader that they were simply misunderstood creatures. In chapter four, titled 'Snakes in the Grass', Tommy-Anne was called away from her conversation with the birds by a great racket in the meadow; there she met Lac and Lactina, milk snakes that lived in her family's garden. She intervened in their attempt to raid a nearby bird nest and demanded an explanation from them for their actions. Lac explained that they were hungry and in search of a meal. Then Wright turned the assumption that snakes, which eat other animals, are bad by having Lac inquire of Tommy-Anne: "Do the House People never eat birds?"⁶¹⁰ Embarrassed, Tommy-Anne countered that when humans eat chickens they kill them first; unfortunately, this defense did not work because Lac and Lactina were constrictors and killed their prey before eating them. The birds

Outing, January 1900, 27, and Grace Isabel Colbron, "Choosing the Children's Library," *The Bookman*, October 1915. The harshest criticism of Wright was that her style was a bit sentimental, but that reviewer concluded that "there is much in her books that is helpful, as well as tender and beautiful." "Review of 'Wabeno the Magician'," *The Literary World*, 25 November 1899, 415.

⁶¹⁰ Wright, *Tommy-Anne and the Three Hearts*, 81.

chimed in that the snakes made them nervous and that they should be banished from the area. Tommy-Anne replied thoughtfully, “I thought you said that Heart of Nature wished all his people to have food...you must complain to him about it. Perhaps the grasshopper that Tchin has this minute eaten, objects to *birds!*”⁶¹¹ Tommy-Anne learned another valuable lesson about the food chain from Mr. Rattle, the Red Squirrel. He told her that when animals killed other animals, it was to satiate hunger. But wild animals were not greedy; they did not take more than they needed, which was similar to the law of the Red People, or Indians, who only took what they needed to survive. Mr. Squirrel indicated that domesticated animals and humans did not follow this rule. Wright was able to illuminate the inherent naturalness in organisms eating other organisms and even turned around the assumption that snakes were bad-- because they preyed on song birds-- in order to demonstrate that such destruction was all part of nature’s plan. By illuminating this relationship she could prompt people to rethink their stereotypes about what was good and bad in nature. Further, by recognizing that the human consumption of birds was similar to that of a snake eating its prey, and that humans were perhaps greedy in their food consumption, she sought to persuade the reader to rethink *their* own role in nature.

The reasons that Americans were presumed to be so out of touch with nature were because the artifices of civilization drew them away. Wright, however, saw hope in the renewed interest in the “life outdoors”; it is this hope that she was trying to capitalize on by publishing her books. Although she held that these sentiments did

⁶¹¹ Ibid., 84-85. Tchin was the name of the Jay.

not constitute a “back-to-nature” movement, she did look back in time for a model that could allow the ‘over-civilized’ to renew their relations with nature. Wright held that Native Americans, or “the Red Brothers” as she called them, in high regard for their attitudes regarding nature. The animals felt a kinship with Indians because both groups lived close to nature. It was commonly held that only after European immigration to the Americas that the Indians had lost their touch with the natural world through following the example of European Americans. Due to the mid-nineteenth policy of Indian Removal, Easterners lamented their newfound physical, as well as cultural, distance from the natives who used to inhabit their lands; Wright, again influenced by her father, felt the same.⁶¹²

Increasingly, Americans emulated the cultural practices and belief systems of the Indian and used them as a symbol of bygone days. Indians came to represent all that was once right in America and when scholars and popular writers compared modern culture to Indian culture of the past, modern culture usually came up short.⁶¹³ One trait in particular that Easterners naturally associated with the Indians was their closeness to nature and their ability to live in harmony with it.⁶¹⁴ Wright accepted the

⁶¹² Out of deference for the natives who inhabited the land surrounding his summer home before him, Osgood changed the name of the street that the family home in Fairfield sat on from “Cedar Street” to “Unquowa Road” after the Indian name for Fairfield.

⁶¹³ This theme is explored in Philip Joseph Deloria, *Playing Indian* (New Haven: Yale University Press, 1998).

⁶¹⁴ The myth of the Indian’s harmony with the natural world is explored in Shepard Krech, *The Ecological Indian: Myth and History* (New York: W.W. Norton & Co., 1999).

premise of the “ecological Indian” who lived in harmony with nature. She used the words and ways of the Indians who inhabited the land before her family, or at least the secondhand knowledge of them, to teach ecological values. This stereotype was perpetuated by Wright in several of her children’s books, including *Tommy-Anne and the Three Hearts*, *Wabeno the Magician*, and *Four-footed Americans*. Indians were romanticized by Americans in the nineteenth century for their ability to intuitively understand nature and could inherently connect to nature without rationalizing it.⁶¹⁵ Indians served as a historic example of people who were knowledgeable about nature, the processes of nature, and were in tune with the spiritual aspects of the natural world. They served as a model of balance and harmony in their relationships to the natural world for Wright.

Indians were not the only humans who could commune with nature and be part of the interconnected web between nature and humanity. Another message that Wright sought to convey to her readers was that humans, when they were properly in tune with the natural world, were part of an interrelated whole. Humans were but one of three “Hearts” that “together rule everything, the seen and the unseen.”⁶¹⁶ The “Three Hearts” were: Heart of God, Heart of Nature, and Heart of Man. The most powerful of these was the First Heart, or Heart of God. According to Wright, Heart of God created the world and “the Plan”, which was administered by Heart of Nature,

⁶¹⁵ Robert F. Berkhofer, *The White Man's Indian: Images of the American Indian from Columbus to the Present* (New York: Alfred A. Knopf, 1978).

⁶¹⁶ Wright, *Tommy-Anne and the Three Hearts*, 13-14.

to guide God's creation. The presence of Heart of Man often threw the natural plan off, thus the job of humanity was to act as stewards and rebalance what their presence had disturbed in the first place.

By demonstrating the interconnected nature of the three Hearts, Wright made a point similar to that made by Liberty Hyde Bailey in *The Holy Earth*: that humanity and nature were all part of God's creation and they were interdependent as a result. Further, the morality one exhibited toward one's fellow human beings, which resulted from recognition that all humans were God's children, could be extended to the natural world because it was also God's creation. Both Bailey and Wright were apprehensive about the effects that the materialism, which resulted from modernization, would have on humanity's connection with nature. By connecting humans and nature with religious responsibility, they hoped to encourage humans to equate the salvation of nature with the salvation of their own soul. Wright's choice of language furthered this connection—in employing the terms *Heart of Man*, *Heart of Nature*, and *Heart of God*, she demonstrated the relationship of humanity, nature, and God through the common structure of their names. Most importantly, her use of the term *Heart* implied that the connection between these three subjects was an emotional and spiritual one. In stressing the spiritual connection between humanity and nature, Bailey and Wright hoped that humans would share an interest in tending to God's plan for nature.

The Plan was logical and efficient, and demonstrated the interrelated quality of nature. In a chapter entitled 'The Flower Market,' Wright demonstrated this well-

laid plan. Through a conversation between Tommy-Anne and a Ruby-throated hummingbird, the reader discovered the purpose of flowers. After identifying the various parts of a flower that were obvious to the naked eye, including the petals, the stamens with pollen on the ends, and the pistil, Ruby-throat explained:

“That is right. Now of all those parts in what is called the flower, only two are absolutely necessary to the growing of the seed: the lunch basket, holding the seed-germs, waiting for their food, of which the knob is the handle, and the balls of golden powder, which is the life-dust,--the food to nourish the speck of life first until it becomes a seed, and then a plant. These powder-puffs are of many shapes and fashions as the flower itself. The coloured petals of the flowers may be different in shape, of one piece or many, large or small, or lacking altogether; but if the basket of seed-germs and the life-dust is there, then it is a flower....”

“But, dear Ruby-throat, if every flower grows its own life-dust, why do they have messengers to carry it to and fro? Why must they buy and sell?”

“This is the reason Tommy-Anne. Even if a flower grows the life-dust, it may not grow it for itself alone, and some plants have blossoms where the seed basket is in one flower and the dust in another; then how could the dust and the basket meet without a special messenger?”

“I can understand that; but this rose has both dust and basket in the same blossom.”

“The rose and many others can supply themselves, and usually do so, but oftentimes the dust on a flower may not be ripe when the seed-germ is the hungriest, so Heart of Nature has told the messengers to fetch and carry, that all may be doubly sure.”

“Who are the messengers, and how do they work?”

“They are many, and as varied as the flowers they serve,--bees, butterflies, moths, and then always the wind, and for some things the Water Brother, though he is greater as a seed-sower.”

“Heart of Nature sends one of these winged transports to the flower whose heart it can best reach, saying, ‘Feed from the honey; take your fill of the golden store.’ As he eats, the life-dust clings to his tongue or hairy legs or feelers, and he bears it with him to be left on the next flower he visits. So two are fed at once, the insect messenger and the seed. And each blossom has its sign by which its rightful messenger knows it, --colour or perfume,--and not one of them would so far forget himself as to mix the message of buttercups and clover.”

“But,” persisted Tommy-Anne, “why didn’t the first Heart arrange the Plan so as to have the life-dust always tip over into the baskets, without messengers?”

In having Tommy-Anne ask this question, Wright had an opportunity to demonstrate that the Plan was not only well-designed and efficient, but that it was also central to the interrelated nature of the natural world. Heart of Nature answered her question:

“Because,” answered a voice that she knew belonged to her Tree Man, even though she could not see him, “nothing is made for itself alone. The bee is for the flower, the flower for the bee. Dependence is the strength of my garden. Do you remember the password, Tommy-Anne?”
“Yes,” she whispered; “it is Brotherhood.”⁶¹⁷

This Brotherhood created an interdependent relationship between the various organisms in nature. In fact, according to Heart of Nature, the strength of nature was in its interdependence.

Brotherhood also existed between the Three Hearts who worked in concert. Previously Wright had used the terms “Citizen” and “Americans” to relate animals to humanity. These terms encourage human readers to accept the similarities between themselves and the creatures of the world because they shared the same values—nationalism and responsibility to their fellow countrymen to provide labor to benefit the nation. Wright deepened this cooperative relationship in the *Tommy-Anne* books by employing the term “brotherhood.” This term implied a closer relationship, one strengthened by the creation of both humans and animals by God, and guided by God’s Plan.

When Heart of God gave the Plan to Heart of Nature he indicated that the Heart of Man would become the steward of the natural world.

⁶¹⁷ Ibid., 211-214.

“Here are the beginnings that I have created; follow now my plan through the long timeless days that I give you for its development...I shall create anew and stamp the animal who is to be the ruler of this globe of mine with my own coinage. He shall be called Heart of Man, and though the youngest thing of all, he shall be the bond betwixt thee and me, for two natures shall be in him, mine and thine.”

“Born shall he be according to thy laws, O Heart of Nature, my servant, and die, seemingly, after thy way; but he wears my image as a spark within him, and when he dies, only your part returns to you,--my part, my coinage, returns to me, its Home. And thus my seal-mark separates him from all other animals, for this seal-mark is the Soul!”⁶¹⁸

Through the plan that God had created, the interconnectedness of the creator, the administrator, and the steward was laid out.

Later in the story, Heart of Nature revealed that the plan did not always progress as Heart of God intended because of the obstinacy of Heart of Man.

“Simple as all this is, House People *will* make things hard to understand, because they ignore the Plan, and measure everything from their own end and test by their own plan, instead of Heart of God’s.”⁶¹⁹

Wright believed that human interference in the mechanics of the natural world, if they did not properly understand the consequences of their actions, could be harmful. For example, when the toads in Tommy-Anne’s garden petition her to remove the snakes, Lac and Lactina, because they were eating the toads, Tommy-Anne briefly considered the issue. Before she could act Heart of Nature intervened. When Tommy-Anne explained that she was trying to help, Heart of Nature responded:

“I know that, Tommy-Anne; but Heart of Man can only help me when he understands the reasons of the Plan, and when he does not understand, the best thing that he can do is to keep his own hands from killing, and to wait!

⁶¹⁸ Ibid., 184-185.

⁶¹⁹ Ibid., 185.

Watch through the Magic Spectacles, but do not interfere with me; for you know nothing, not even how to build a sparrow's nest."⁶²⁰

Heart of Nature indicated that it was up to nature to find a means of controlling the snake population in the garden. Humans were discouraged from taking action if they did not properly understand the proper devices of the natural world and indication that humans could not properly conserve nature if they were not intellectually and emotionally in tune with nature.

In her second book in this series, *Wabeno the Magician*, Wright picked up the story of Tommy-Anne four years later and continued her adventures with the "Magic Spectacles". However, in this second novel, Tommy-Anne had become Anne, having given half of her name to her baby brother at the end of the first book. But, we also get an indication that Anne recognized her fate as a young woman and was trying to reconcile herself to her future, much in the same way that Wright had to steady herself for a life as a housewife instead of a doctor. Anne told her parents:

"I can climb better than ever, because my arms are longer; I ask as many questions, and I'm only just beginning to understand a few of the whys. I like outdoors much better than indoors, and dogs better than cats and dolls; but, as I'm a girl, I want to be called by a girl's name, so *please* father-mother, call me Anne. Then, perhaps, by and by when I grow up to have to wear long skirts and turn up my hair and tread on every step of the stairs and *always* go *through* gates, I *may* like to be called my whole name, Diana, after the hunting lady with the young moon on her head."⁶²¹

Thus, an older, less boyish Anne continued her quest for the answers to the *whys* of nature.

⁶²⁰ Ibid., 176.

⁶²¹ Wright, *Wabeno the Magician* ", 2-3. Original emphasis.

Many of the elements of *Wabeno* are the same as *Tommy-Anne and the Three Hearts*. Anne continued her explanation of the natural world in the nearby, but Wright moved beyond the biological sciences to provide explanations of the process of physical science and Anne explores beyond the fields and forests of her home. Although much of the focus was on the organic world, which Wright was most comfortable with, she did address some issues regarding the inorganic world. For example, Anne learned the effect that the weather, namely ice and snow, had on the land, how coal was formed, and the characteristics of the solar system.⁶²² These topics allowed Wright to introduce the concept of evolution into the story. In her discussion of the importance of the cold to the earth, Wright told her readers about the process of the creation of the earth through a conversation between Anne (through the powers of her “Magic Spectacles”) and an icicle. The icicle told Anne:

“When Heart of God made the Plan, the only thing he took to work was a bit of hot air from the Sun’s breath, that he whirled about like a fiery ball. Then he made me, Cold, and told me to touch this ball and help to make it solid. By degrees I cooled it on the outside to a rocky crust. Then Water came next and covered all the earth and it grew cooler still. But for a long time only seaweeds and shapeless animals lived in the water; it was too hot for any other life. Then through long ages, Heat and Water and I worked out the Plan to shape the earth for man.”⁶²³

After some further explication about how the mountains and soil were formed, the icicle goes on to tell how the earth was populated with animals.

⁶²² Pluto was not listed among the eight planets that Wright discussed because Pluto was discovered thirty one years after the publication of *Wabeno*.

⁶²³ Wright, *Wabeno the Magician* ", 37.

“All this was in the days of the Earth’s fashioning. Here, in your country, each of these timeless days brought a new form of life. Seaweeds and shells at first, then insects, frogs, lizards, fishes, reptiles, birds. Giant beast brothers roamed about the tropical forests and lay in places now covered half the year with ice and snow.”⁶²⁴

The icicle went on to explain that the earth was still not prepared for humans and that it underwent an ice age which loosed the earth so human food could be grown. The Plan directed the cold to retreat and at that point the “earth was ready then for Heart of Man.”⁶²⁵ At other points in the book Wright similarly explained the formation of the solar system and of coal through the physical elements and processes. All of these changes were directed by the Plan, which was created by God for the ultimate benefit of humanity. She explained these physical concepts in easy, direct language, with enough detail to further the story, but without overwhelming her readers with details and scientific terms.⁶²⁶ Anne, like many young readers, felt that physical science was much harder to grasp than natural science. At one point Anne exclaimed:

“Oh dear, how very complicated!’ signed Anne to herself; ‘the whys and hows of Skyland are much more like arithmetic lessons than the reasons why of the Bird and Beast Brotherhood. I’m very sure I like the Earth garden best.”⁶²⁷

⁶²⁴ Ibid., 37-38.

⁶²⁵ Ibid., 39.

⁶²⁶ Wright did provide one technical term in a footnote of her discussion of the formation of coal. She acknowledged that the period when coal was formed was known as the “Carbonic era”; however, in the text she referred to it as the “Carbon Time.” Ibid., 143.

⁶²⁷ Ibid., 117.

Like Anne, Wright's preference was also for the biological sciences, but these physical discussions allowed Wright to demonstrate that it was possible to believe that evolution could be directed according to the plan of God. But Wright had a greater purpose in writing this story, she sought to demonstrate that the imagination could be a powerful tool in aiding in the understanding of nature.

With the new name, Anne also accepted the responsibility of her young brother Tommy. He was yet too young to have earned the "Magic Spectacles" so he did not seek the *whys*, or the facts of nature, in the manner that Anne does. In fact, as Anne noted, Tommy was "unabashed by facts"; instead his youth allowed him to still live in a dream world, which gave Wright a bit more liberty to introduce more fanciful elements into this book.⁶²⁸ The book is, in fact, named for the new mysterious element that Wright introduced—*Wabeno the Magician*. Again drawing heavily on the Indian lore and references of the first book, Wright continued referring to the elements and animals of nature by their Algonquin names and she introduced Wabeno as an explanation for those occurrences in nature that have "haphazard and mysterious cross-purposes,"⁶²⁹ Wabeno was a young warrior, born in the Morning Star, to the "race of Wenona".⁶³⁰ Wright relied heavily on Henry Longfellow's *Song of Hiawatha* for her Indian lore. In Longfellow's epic poem, Wenona, a young Indian girl, was seduced by Mudjekeewis, the West Wind, and they became the parents of

⁶²⁸ Ibid., 21.

⁶²⁹ Ibid., 12.

⁶³⁰ Ibid., 14.

the protagonist, Hiawatha.⁶³¹ Wright's character Wabeno is also made an appearance in *Song of Hiawatha*; Longfellow's Wabeno was a mischievous spirit, much like in Wright's book. But Wabeno went beyond Longfellow's poem and there is evidence that the Wabeno were an Algonquian religious shamanic group that had magical powers that Wright had undoubtedly heard of from stories about the Algonquian Indians that lived in the same fields that she explored, but centuries before.⁶³² Wright used Wabeno to explain away the unexplainable or strange occurrences in nature. For example, the book began in March, with the onset of spring, but there was a sudden cold snap and to Anne's dismay, snow was falling. Through her "Magic Spectacles" Anne learned that the North Wind, or Kabibinokka, who was escorting winter to the north, was signaled back to the region by Wabeno. To further confuse matters Mudjekeewis, or the West Wind, was called in from the warm deserts of the west. The confusion caused between the two competing winds delayed the transition from winter to spring for a bit longer. Throughout the story when Anne asked about events that did not unfold according to the Plan she was told to ask Wabeno. Thus

⁶³¹ Henry Wadsworth Longfellow, *The Song of Hiawatha* (Boston: Ticknor and Fields, 1855). Longfellow's poem was drawn from Ojibway folklore; given Wright's love of literature, she likely encountered the magician in this context Wright borrowed other terminology from Longfellow's long poem, including some of the Indian names of the animals. Additional proof that relied heavily on Longfellow's poem can be found in the early pages of *Birdcraft* where she used the poem to issue a plea not to shoot birds: "And the birds sang round him, o'er him, 'Do not shoot us, Hiawatha!' Sang the Opechee, the Robin, Sang the Bluebird, the Owaissa, 'Do not shoot us, Hiawatha!'"

⁶³² For a definition of Wabeno, see Arlene B. Hirschfelder and Paulette Fairbanks Molin, *The Encyclopedia of Native American Religions: An Introduction* (New York: Facts on File, 1992), s.v. "Wabeno".

nature was not truly, or completely, knowable according to Wright; some facts of nature must be left to the explanation of powerful magic.

Wabeno was recognized by the natural elements and animals as a wise spirit that knew the answers to many things. He stands in direct contrast to the most knowledgeable character in Wright's *Citizen Bird* and *Four-footed Americans*, Dr. Roy Hunter, who was a man of science. Through Hunter is able to demonstrate one way of knowing nature, through a rational, scientific process, where questions can be answered by observing nature and reasoning the truth. However, Wright makes an important point about the ultimate know-ability of nature and about the process of gaining knowledge in the *Tommy-Anne* books. According to Wright there are some mysteries of nature that humans can never really understand, even by employing the methods of science. Wabeno is not ever visible to humans, including the "Red Brothers", instead, humans must close their eyes to see him as "only the mind's eye may see him unblinded."⁶³³ In other words, the work of this mischievous spirit can only be viewed by using the imagination. By introducing Wabeno, in addition to Anne's "Magic Spectacles", Wright furthers her point that imagination is also a tool that one can use to examine nature, especially for children and Indians, the supposed children of the race.⁶³⁴

⁶³³ Wright, *Wabeno the Magician*, 14.

⁶³⁴ Anne possessed, in a sense, shamanic qualities because of her ability to converse with nature. When she gained possession of the ability to communicate with natural objects through the "Magic Spectacles," she became closer to nature, much like the assumptions that Indians were closer to nature because of their emotional, intuitive connection.

Reconnecting Humanity and Nature through Fancy and Imagination

Wright believed that the Three Hearts were not as closely connected as they should be—humanity had lost touch with nature, but also the spiritual in nature. Wright gave us insight into the origins of this imbalance in *Four-footed Americans and their Kin*. Dr. Roy Hunter, a naturalist and the principle adult character of this book, and the accompanying book for birds, *Citizen Bird*, told his nephew that “The great balance wheel of Nature is so carefully made and well planned by its Maker that we must always touch it reverently.”⁶³⁵ He further explained that:

“In this world of ours nothing, from the least grain of sand to the strongest animal, was made for itself alone. Each thing depends upon some other thing, which is equally dependent in its own turn. So we may compare this plan to a wheel which, though it is made of many different parts,—hub, spokes, rim, and tires,—would not be a useful, perfect wheel if even a single spoke were missing, so much does the strength of the whole depend on even the least part. We may think that this animal or that is of no use, until we find by experience that it filled its place as a small but important spoke in this life-wheel.”⁶³⁶

But, if one spoke in the wheel, one plant or animal, increased unchecked, or their populations were depleted, then the wheel became unbalanced. Wright believed that human intervention produced this imbalance, but even more than this, that the imbalance was a product of humanity’s fall from grace in the eyes of God. Hunter continued:

⁶³⁵ Wright, *Four-Footed Americans and Their Kin*, 47.

⁶³⁶ *Ibid.*, 47-48.

“This is a penalty man has to pay in many ways for eating of the fruit of the tree of knowledge. He has to labor to accomplish many things that Heart of Nature intended doing for him.”⁶³⁷

The human distance from nature was a product of the original sin that Adam and Eve committed in the Garden of Eden. But further than that, the distance from nature was also caused by simply viewing nature as a source of rational knowledge and downplaying it as a source of reverence and emotional enhancement. In other words, a purely rational approach toward nature, like that inherent in science, was simply not enough to put humans in harmony with the *Heart* of nature. Once again, she was influenced in this idea by her father. Osgood was open to the scientific pursuits of his day. Further, he did not believe that the scientific enterprise precluded faith or vice-versa. Instead, science and scientists could serve as the handmaid of religion and spirituality. In *American Leaves* he asked: “does not cold calculus become even a ministry of faith, as he applies the law of numbers and figures to the heavens, and shows us that mathematics can note with the precision of musical notation, the harmony which the heavenly orbs follow in their rhythmic and eternal marches?”⁶³⁸ Science complemented faith and allowed humanity to see God in nature. The organisms in nature were not mere organisms, but, instead they provided insight into

⁶³⁷ Ibid., 48.

⁶³⁸ Osgood, *American Leaves*.

the plan of God and were an opportunity for humanity to demonstrate their willingness to follow this plan by cultivating a harmonious relationship.⁶³⁹

Could humans ever redeem themselves and gain a true understanding of nature? Not, Wright believed, through a single-minded, scientific approach. After she praised the efforts of scientists, she nevertheless held that science was limited in what it could teach the observer about nature. There was a realm of action that could not be explained with the observation of the eye and the machinations of the brain alone; this was the realm of feeling and emotion that could not be measured.

The character study of the bird is beyond the mazes of classification, beyond the counting of bones, out of the reach of the scalpel and the literature of the microscope. We comprehend its air-filled bones, and its physical evolution, uses, and limitations. We know that it is frailly mortal,--but still a bird will seem like a voice from some unknown region. The beasts of the earth are bound to its face, and man also, for science, as yet, can guide but very poorly even the most limited aerial navigation; but the bird appears, in a way, to surmount the attraction of gravitation, and, as its eulogist Michelet says, "feels itself strong beyond the limits of its action."⁶⁴⁰

Humans can measure, classify, and rationalize every visible aspect of nature, but this can never lead to a complete understanding of the organism. For Wright it was important to understand the habits of birds and their classification; but true knowledge would not be gained until one learned to recognize and appreciate the poetic beauty of nature in the ethereal realm.

⁶³⁹ Samuel Osgood, *The Gospel among the Animals, or, Christ with the Cattle* (New York: Samuel R. Wells, 1867).

⁶⁴⁰ Wright and Philippon, *The Friendship of Nature*, 73.

Is nature truly ever completely comprehensible? Not according to Wright. She believed that there were mysteries in nature because there were mysteries in the creation of the Plan. In *Wabeno the Magician*, Anne asked Heart of Nature if the “Magic Spectacles” would help her understand Heart of God in the way that they had helped her understand Heart of Nature, and the way that they had helped Tommy understand Heart of Man. Heart of Nature responded that the only way to truly understand God was through the means of “crystals of a wondrous fashioning” that would need to be earned.⁶⁴¹ If Heart of God was a mystery, it followed that elements of the Plan could be mysterious as well. There were some things that were beyond reason and beyond imagination.

Wright did catalogue the facts of nature in three of her early books (but certainly not in the manner of a dry, scientific publication), but she was not satisfied with solely representing her interpretation of nature to her audience in this fashion. Facts were important to Wright, and she believed that every person should have access to these facts but that this would not lead them to consider nature emotionally. No, nature needed to be experienced, even if it was only through the pages of a book. And most importantly nature, and humanity’s bond with nature, was something to be felt. It was only through a sympathetic understanding of the natural world that humanity might preserve it for future generations.

⁶⁴¹ Wright, *Wabeno the Magician*, 185. Heart of Nature revealed to Anne at the end of *Wabeno* that “it is only by looking through the eyes of Heart of Nature and Heart of Man that on this earth you may see Heart of God!” (p. 343).

Following her passing, Frank Chapman praised Wright's 'well-balanced judgment,' the rational basis of her convictions, the fact that "she had both the courage and the language with which to express them," her selfless dedication to the cause, and the fact that "she never let sentiment overrule the dictates of sense."⁶⁴² Wright was respected as a writer who could balance reason and sentiment by some in the scientific community.

Wright had dedicated the early part of her career, about the first five years, to relating these factual and fanciful stories to children. After 1900, while she did write three more children's books and her imaginative stories were republished as *The Heart of Nature* series of readers, she spent most of her energy on nature romances for adults, the Barbara books. And the three children's books she did write were nature-based narratives, but lacked the elements of fancy found in her earlier books. This shift away from fanciful nature stories was not an indication that she had given up her desire to educate children. She continued to write extensively for *Bird Lore* on issues of education and providing educational information on birds for teachers and bird study class leaders. It also was not an indication that these fanciful books were failures and forced her to pursue another route in order to save her writing career—as previously mentioned these books were successful. So why the sudden change of heart and direction? Wright does not speak to this issue directly in any of her writings, but based on the negative reaction to the nature-faker debate and the reaction against fancy and imagination in nature-study, we can assume that Wright no

⁶⁴² Chapman, "Mabel Osgood Wright: 1859-1934."

longer felt the freedom to produce these types of stories. These early fanciful books provided her the venue to express sentiments about nature, spirituality, and humanity's relationship to both. But the professionalization of the sciences and the scientist's efforts to control all aspect relating to nature, including education, made it increasingly difficult to express these same sentiments and not seem old-fashioned or outdated. She continued her efforts in children's nature education through her *Bird Lore* publications, but turned her attention to a venue where she could be openly sentimental and old-fashioned—romance novels.

Conclusion

Liberty Hyde Bailey and Mabel Osgood Wright were contemporaries who shared much in common and were aware of each other's work, but there is no evidence that they ever met. They were born a mere ten months apart, and although Bailey was born in the wilds of Michigan and Wright was born in one of the fastest growing metropolises, they were both instilled with a love of nature in their childhoods. Approximately thirty years later they would end up within 225 miles from each other in New York State. Both had successful careers as writers, even sharing the same publishing company of Macmillan in Manhattan. In addition, they shared a love of gardening and both wrote on the subject, Bailey in the form of textbooks and guides to make the layperson more successful, and Wright in the form of garden-centered fictional stories, also with the purpose of providing information to aid the success of amateur gardeners. They would have shared some colleagues in common, besides publisher George P. Brett; for example Louis Agassiz Fuertes, a student and later lecturer in ornithology at Cornell University, who illustrated *Citizen Bird* for Wright and Coues.

There is also evidence that Bailey and Wright knew of each other's work. For his part, Bailey wrote to Macmillan in June 1908 to request a copy of Wright's book *The Open Window*, a book in her Barbara series.⁶⁴³ Although there is no evidence of

⁶⁴³ The Macmillan Company to Professor L.H. Bailey, 22 June 1908 from New York, Liberty Hyde Bailey Papers, 1858-1954, The Division of Rare and Manuscript Collections, Carl A. Kroch Library, Cornell University, Ithaca, NY, Archive 21-2-541, Box 3. This letter contained a response from the publishing company to Bailey regarding his request and indicating that they had sent the book.

his opinion of the work or whether he ever read it, he was certainly aware of her adult fiction work. And Wright knew of Bailey's work as well. In a review of H.D. Heminway's *School Garden Manual*, submitted to Macmillan, Wright concluded that the book was a "dreary performance and will not bear comparison to such work as the Cornell Experiment Station issues in leaflet form for the use of teachers, under L.H. Bailey's supervision."⁶⁴⁴ She went on further to note that "[i]f Bailey would undertake such a book, well illustrated, it would doubtless be a success."⁶⁴⁵ Wright respected Bailey's work and was conscious of its value regarding veracity for its readers.

Despite the aforementioned points where their lives indirectly intersected, their lives were quite different. Bailey was a respected man of science and leader of an influential university department; he published a number of different kinds of books, including scientific, philosophical, and educational treatises, on a wide range of subjects from evolution, to gardening, and pedagogy. Wright was a housewife (granted, not your typical housewife) and proper Victorian lady (although she occasionally flouted convention) who wrote and published both fictional and non-fictional, yet popular, books on gardening, plant life, and birds. Their books likely sat on the same shelves in the homes of their reading publics, mainly due to the broad

⁶⁴⁴ Mabel Osgood Wright, undated review of "School Garden Manual" by H. D. Heminway, Macmillan Company Records, Manuscripts and Archives Division, New York Public Library, New York, Box 19. Wright's negative response to this book may have put an end to the author's hopes for publication as there is no evidence that this book was ever published.

⁶⁴⁵ Ibid.

range of Bailey's writing. However different their lives and careers were, they both came independently to their moderate positions in regard to the place of fancy, imagination, and sentiment in discussions of nature for children's audience.

In the decades surrounding the turn of the twentieth century, the boundaries between the scientist and the public were becoming increasingly defined. Scientists were organizing into exclusive scientific societies, finding positions reserved for people of their expertise in universities and government agencies, and were publishing in specific venues reserved for their observations. However, as the dominion of science over issues regarding the subject of its study, nature, was expanding, there were still some areas in American culture in which the authority of the scientist was not assumed and was even challenged; in particular, in regard to the study of nature by children in its many forms, including formal in-class nature-study and the reading that children did on their own time of nature literature.

Scientists and science enthusiasts did attempt to exert control in these areas of nature pedagogy for children, and they were eventually successful to varying degrees in both arenas. Scientists provided the organizational capital for formalized nature-study by providing the pedagogical standards and the practical lessons and training for teachers to be successful in advancing the study of nature in their classrooms. The major centers for nature-study were two prominent universities, the University of Chicago and Cornell University, and the majority of the individuals involved with the programs at these institutions were trained scientists or teachers trained to teach the sciences. Scientists also regulated professional membership by founding the

American Nature Study Society and the associated journal, the *Nature-Study Review*. However, in spite of the control these scientists had over formal nature-study, one of the greatest debates that the newly formed professional organization faced was: what was the relationship between nature-study and science? Within this debate there was a contingent which did not assume that the values of science and the tools of science—reason and factual knowledge—should dictate the way that children learned about nature. This contingent, albeit small, included prominent scientists, including Liberty Hyde Bailey. Despite the fact that science was being touted as the defining activity of modern culture, Bailey accepted the limitations of science and opted not to promote it in certain arenas. In particular, he believed that the methods and expected outcomes of science were too exclusive and inappropriate for young children. He advocated truthfulness, but not at the expense of the spirit of nature—children should not get too caught up in the mechanics of nature or the complicated Latin names ascribed plants and animals, but instead should gain an appreciation for the beauty and complexity of the natural world and allow this appreciation to raise their spirits. Bailey believed that the scientific vision of nature, which was rapidly becoming the dominant view of how to understand the natural world, would come in time if a child went forward in their education; it was the artistic vision of nature that the school-age child was best designed to comprehend and that was most lacking in the modernizing world. Bailey is unique because, despite his membership in the exclusive fraternity of science, he provides us a glimpse of a scientist who did not uphold the values of science in every instance, but considered the usefulness and appropriateness of

science to be a matter of debate, in particular when it came to the education of children.

Fancy and imagination were more acceptable in nature literature because it fell outside of the boundaries of the nature-related activities that scientists could easily regulate. Nature literature came on the scene before scientists organized and declared their professional affiliation, so it already had an established place in American culture. In addition, nineteenth-century psychology declared that children enjoyed fancy and imagination because they represented the childhood of the race. Increasingly over the nineteenth-century, parents accepted that their children should read fairy tales and myths because they were appropriate for the development of the child. Thus, nature-writers began to infuse elements of fancy and imagination in their nature stories for children. Children's literature had always encouraged imagination so it was not too difficult for fanciful representations of nature to make it into nature study books. Scientists and science-enthusiasts did contribute to nature literature, and although it was a pursuit that they could not wholly control, this fact does not mean that they did not try to regulate the standards for representations of nature in literature. One of the defining debates of the early twentieth-century was the nature-faker debate, which hinged on whether representations of animals with any cognitive abilities beyond basic instinct should be allowed representation in nature literature. Scientists and science sympathizers, like Burroughs, argued that by anthropomorphizing animals and granting them emotions and actions that resembled human emotions and actions, the writer was misrepresenting the truth to be found in

nature. In reaction to this rigid stance, the authors that were critiqued in this debate argued for the veracity of their stories. In between these two extreme positions, Wright contended that nature authors should be allowed latitude in their representations of nature in order to entertain and instruct their audience; nature should be used as a “field for fiction” or a setting for fictional stories. This latitude that Wright sought did not allow for willful misrepresentations of nature; she believed that there should be adherence to the facts of nature, but if an author wanted to imbue their plant and animal characters with human qualities, such as speech and emotions, and human actions, they should be allowed in order to help the audience, in particular children, relate to the characters.

Both Bailey and Wright were bound by their professional allegiances in their allowance of fancy and imagination. As a scientist, Bailey was careful not to advocate too much fancy and oversentimentalism because it took him too far from his professional values. Wright was not a scientist, but instead a nature writer who was committed to the creation of stories that would inspire and entertain people; because of these allegiances, she sought a middle ground which allowed some license for writers in detailing nature.

Bailey and Wright took moderate stances regarding fancy and imagination in representations of nature. Neither accepted that the study of nature should be a wholly rational pursuit, but sought for it to be a spiritual pursuit as well. Both held that nature should be understood in a rational manner, but that nature could be understood and *experienced* in an imaginative, fanciful, and emotional manner as

well. Modern science and the modern world valued nature as a source of rational knowledge and downplayed, or outright dismissed, the idea that nature was a source of spiritual and emotional knowledge and experiences. Bailey and Wright celebrated the advantages that a rational approach to nature provided, but not at the expense of the spiritual value of nature. They fought for a balance between the two approaches not because they were anti-science or anti-modern, but because they strongly held that the modern American, although gaining from the advantages of modernism, were nevertheless losing their spiritual connection to the land, and as a result their unique American character, in becoming too invested in the material advances of the modern world. Bailey and Wright hoped that this connection to the natural world could be restored by appealing to the emotional side of the child, who represented the hope of the future.

Wright and Bailey were important voices of moderation in this period where the relative values of reason and fancy were not solidly defined. However, after the Great War, fancy and imagination were increasingly viewed with suspicion, even for an audience of children. European pedagogue and educational reformer, Maria Montessori, published a scathing article regarding the assumptions that psychologists and educators had made about the role of imagination in the life of the child.⁶⁴⁶

Montessori presented her ideas at the conference of the National Education Association, and they were later published in the *Addresses and Proceedings of the*

⁶⁴⁶ Maria Montessori, "Education in Relation to the Imagination of the Little Child," *National Educational Association—Journal of Proceedings and Addresses* (1915): 661-667.

National Education Association. In the lecture and subsequent article, she chastised psychologists and educators for their adherence to the premise that the development of the child mimics the development of the race and, especially, the theories that held that children were similar to primitive peoples in their psychological characteristics.

She wrote:

Rather than give utterance to similar flights of scientific fantasy, it is simpler to note that an organism still immature, like that of a child, may distantly resemble mentalities less matured than our own. But allowing those who interpret infantile mentality as the “savage state” to keep their beliefs, the objections can still be raised that in any case this savage state, being a passing state and one which has to be overcome, education must help the child to pass thru it. It should not develop the savage state or hold the child back in it.⁶⁴⁷

She held that the assumption that children were essentially savages led to an improper focus on imagination in the education of children. She conceded that “[i]t is natural that the child in the nebulous period of his mind should be attracted by fantastic ideas, but we must not, because of this, forget that he is our successor, the one who must outstrip us.”⁶⁴⁸ In other words, a child should not be held back developmentally by the “so-called education of the imagination.”⁶⁴⁹ Her ideas gained in popularity in the United States following her 1915 visit and the attack initiated at this time which was referred to as the “crusade against fairy tales.”⁶⁵⁰ Montessori argued that the period

⁶⁴⁷ Ibid., 662.

⁶⁴⁸ Ibid.

⁶⁴⁹ Ibid., 665.

⁶⁵⁰ Popular writers and editorialists took notice of Montessori’s critique of the fairy tale and responded negatively: “Crusade against Fairy Tales,” *Current Opinion*, 72 (1922): 87-88, and “Killing the Fairies,” *Literary Digest*, 76 (1923): 31. Montessori

surrounding the Great War was a time of “great progress in civilization as compared with past centuries” and that this progress was a direct product of “the fact that man has used the positive research of truth as the basis of the imagination” which had led to great scientific advances.⁶⁵¹ The point of education, according to Montessori, was to prepare the child for life in the burgeoning scientific world, and cultivating their fancifulness and imagination did little to prepare them for life in the modern era.

Jerome Griswold, professor of literature at San Diego State University, has argued that the years between 1865 and 1914 were the “Golden Age” of children’s literature in his book *The Classic American Children’s Story*.⁶⁵² During this period children’s literature was among the best-selling of any genre and was characterized by nostalgia for the past and the child as a symbol of the hope for the future.

Although Griswold does not provide an explanation for the decline in production of children’s literature that occurred following 1914, it is important to note that his cut-off date, which is based on data that he presented regarding the top selling books in American culture, is close to the date where Montessori called for a shift in the

was not the only critic of the fairy tale as she managed to convince American scholars that myth and fairy tales had limited value. For an example of an American critique see the following article by a professor at the Northern State Normal School in Marquette, Michigan: Gilbert L. Brown, "The Case against Myths, Folk-Lore, and Fairy Stories as Basal Reading for Children," *Education* 42 (1922): 159-165.

⁶⁵¹ "Crusade against Fairy Tales," 666.

⁶⁵² Jerome Griswold, *The Classic American Children's Story: Novels of the Golden Age* (New York: Penguin Books, 1992).

assumptions regarding childhood and imagination. From this point, until relatively recently, children's literature witnessed a decline in its status amongst readers.⁶⁵³

In addition to the documented decline in the importance of imagination in the education of children and in children's literature, there was a shift away from nature-study toward elementary and general science courses for youth. Already in 1909 there was a documented decline in interest in organized nature-study. Arthur Dewing, a professor at Harvard University, noted that teachers were losing interest because they had not been properly trained in both the science and pedagogy of nature-study and because of the difficulty of incorporating nature-study into the curriculum due to the time and effort that it took to plan the lessons and to collect the materials.⁶⁵⁴ Dewing was positive that these difficulties could be addressed and overcome, but the hard part would be getting the teachers in the field prepared to tackle these issues. Percy Rowell provided documentation in *The Elementary School Teacher* of teachers' lack of commitment to nature-study. Eighty-three percent of teachers surveyed believed in incorporating science into the grade school curriculum; however, only eight percent believed that it should be in the form of nature-study.⁶⁵⁵

⁶⁵³ Griswold notes that in the 1980s and 1990s there was a resurgence of interest in children's literature, in part because the baby-boomers, who grew up on stories from the "Golden Era," were having children and providing them with books.

⁶⁵⁴ Arthur S. Dewing, "Some Reasons for Decrease of Interest in Nature Study," *Education* 29, no. 5 (January 1909): 291-293.

⁶⁵⁵ Percy E. Rowell, "The Status of Science Teaching in the Elementary Schools of the United States," *The Elementary School Teacher* 13 (September 1912-June 1913): 387-404. It should be noted that the two aforementioned categories were represented as separate answers; a respondent could only select from the following choices: A.

Rowell's article served as an argument for general science instruction to replace nature-study. He concluded:

While nature-study has its place, and instruction in agriculture is certainly most desirable in the grades, these studies are naturally self-limited and do not supply the needs of the child in this preeminently scientific age. General science, which embraces both nature-study and agriculture, as well as including material from all of the sciences, not only supplies the needs of the child but, by showing him undreamed-of-possibilities, stimulates him to higher and better things. Instruction in general science, and in the methods of teaching general science in the grades, should be given in every normal school of the United States.⁶⁵⁶

Nature-study had run its course of usefulness, in light of the increasing power that science held in the modern world. The institutions that promoted nature-study continued into the next two decades of the twentieth-century. There was even a sense of optimism for the future of nature-study when in 1914 and 1915 the American Nature Study Society reelected its first president, Liberty Hyde Bailey. However, the fate of nature-study became increasingly clear in the third decade of the century. The *Nature-Study Review*, the journal for the profession, discontinued publication in 1923. And classrooms shifted to education in either general or elementary science.

Even Bailey and Wright decreased their involvement in nature-study related activities in the second decade of the twentieth-century. Bailey retired from Cornell in 1913 and entered the third phase of his life in which he pursued other activities,

Yes; B. Yes—as nature-study; C. Not as a definite subject—as correlation; D. No. Thus, the eight percent who believed science should be taught in the form of nature-study was separate from the eighty three percent who believed science should be taught. This does not change the conclusion that relatively few teachers were on board with the nature-study program in 1912-1913.

⁶⁵⁶ Ibid., 404.

namely scientific research and travel, the development and management of the Bailey Hortorium, and participation and leadership in the Country Life Movement. And while he did serve as the president of the American Nature Study Society following his retirement, his activities in this direction waned in the years following 1915.

Wright too slowed the pace of her nature-study work in the second decade. While she had previously published between three and eleven articles a year for *Bird Lore* since its creation in 1899, she cut back to about one to two articles a year, some years not even contributing a single article. Wright shifted her focus to the creation of Birdcraft Sanctuary and Museum.

Did Bailey and Wright no longer believe in the importance of nature-study and teaching children about the natural world? Certainly not. Their priorities had simply shifted along with those of the American public. In addition to the fact that Bailey promised himself in his youth that he would spend his latter years in pursuit of his own interests, he also viewed the Country Life Movement as the next step in his bid to save rural civilization. And Wright viewed the creation of a Sanctuary, adjacent to her childhood home, which could serve the dual purpose of preserving birds as well as the forests she explored as a child, as the next logical move in her bid to save the birds and her childhood experiences. As they entered midlife, both were still committed to saving the souls of their fellow Americans, even as they both became concerned with furthering their legacies by moving on in new directions.

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