

The Pinchot Family and the Battle to Establish American Forestry

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In his autobiography, Gifford Pinchot proclaimed, “My Father’s foresight and tenacity were responsible, in the last analysis, for bringing Forestry to this continent. That being true, he was and is fairly entitled to be called the Father of Forestry in America.”¹ While this bit of hyperbole by America’s first native-born technical forester may simply reflect family pride, it is not unreasonable to consider the Pinchots the Founding Family of American Forestry.

That qualified honor, however, came at the expense of other eminent foresters, most notably Bernhard Fernow and Carl Schenck. The Pinchots’ determination to establish a distinctly American style of forestry in the United States resulted in a dramatic struggle that divided and disrupted the profession in its early years. Firmly believing that the end justified the means, the Pinchots ultimately overwhelmed their German-born competitors by outspending, outwitting, and outmaneuvering them while working to establish their vision of scientific forestry in America.

Gifford Pinchot’s quick rise to prominence in the American forestry movement made the family’s desires possible. He instituted the first work in practical forestry management in the United States at the Biltmore Estate, was the head of the federal government’s forestry work from 1898-1910, organized the United States Forest Service in 1905, and served as President Theodore Roosevelt’s chief adviser on all matters of conservation. Pinchot’s entry into forestry was largely a result of his father, James Pinchot, who made part of his fortune from “the grand sport of the 19th century economy—land speculation,” a sport that in his case included lumbering in eastern Pennsylvania, as well as other parts of the country.² In his fifties, James had semi-retired to the French-style chateau Grey Towers he constructed overlooking Milford, Pennsylvania, in the late 1880s. Photos of the house while under construction show a barren hilltop, providing a constant reminder of what his work had wrought. As Char Miller has asserted, James was disturbed by the damage done to the environment by lumbering—denuded land, eroded terrain, streams and rivers clogged by the runoff. His travels in Europe convinced him that there was another, more constructive way to deal with forests. He sought to heal the land in part by offering up his eldest child Gifford to expiate his own sins against it.³

Ultimately, Gifford shouldered most of the family’s responsibility, but other family members aided him greatly. While Gifford’s sister Nettie (Antoinette) did not readily share the family’s interest in forestry, his brother

Courtesy of Jesse Buell Collection, USDA Forest Service, Grey Towers NHL,
Milford, Pennsylvania.



Summer Camp at Milford, PA, in the summer of 1909 (Gifford Pinchot in front middle with bow tie and dog).

Amos, on the other hand, briefly entertained the notion of following his older brother into the forestry profession. He instead chose to become a lawyer but contributed to the cause of forestry in other ways. In 1900, he would join with Gifford and their mother, Mary Eno Pinchot, to financially endow the Yale School of Forestry; James approved of the decision but instead of money, he provided land and buildings for the school at Grey Towers. Mrs. Pinchot also served as her bachelor son's hostess, opening their Washington and Milford homes to the leaders of the conservation movement and students of forestry alike, making all feel welcome. For the Pinchots, forestry was a family affair.

When Gifford entered Yale College in 1885 at age twenty, James had determined that his son would train for a career in forestry at a time when forestry was not practiced in the United States, and there were no forestry schools in North America. Focused from the outset on his future profession, the young man took relevant science classes and read every book and journal on forestry and forests he could find.⁴ Yet, shortly before graduating, Gifford's maternal grandfather offered him the opportunity to enter into his businesses and be assured of a life of easy wealth. James, however, reminded his son that his destiny lay in forestry.⁵ The matter settled, upon graduation Pinchot went to Europe to study forestry at the urging of Charles Sargent, the eminent Harvard botanist, and Bernhard Fernow, chief of the Department of

Agriculture's Division of Forestry. Both men were leaders of the nascent forest preservation movement and among the most knowledgeable men about American forests.

Shortly after arriving overseas, Pinchot fortuitously met the German-born forester Sir Dietrich Brandis. An expert on silviculture and considered one of the top foresters in the world, Brandis had introduced German forestry techniques into Burma and British India in 1856 but now taught forestry at Cooper's Hill in Britain. He was escorting students through German forests as part of his teaching duties when Pinchot met him in 1889. Brandis encouraged the young man to immediately enroll at the French Forest School at Nancy, gave him the necessary letters of introduction, and arranged month-long apprenticeships for him with other leading European foresters.⁶ He gladly became Pinchot's mentor, advising and teaching the young American about forestry and how best to bring it to the United States. Pinchot constantly sought his advice on forestry and national forest policy for nearly two decades until Brandis' death in 1907.⁷

Pinchot assumed that his only chance for professional employment was with the federal government. So, before he left for Europe, he solicited and received an offer from Chief Fernow to join the Division of Forestry as his assistant chief upon his return.⁸ A German-born and trained forester, Fernow had been deeply involved in the American forestry movement since his arrival in the United States in 1876. A forester living in a country that had no interest in what he did, he supported his family working a variety of jobs, including managing a large forested property in Pennsylvania for an iron manufacturer, before being named chief in 1886.⁹ Discouraged about the chances of introducing scientific forestry management to the United States any time soon, Fernow advised Pinchot not to make forestry his primary profession, but rather make it a secondary one to landscape gardening or some other career that drew on the same sciences.¹⁰

Pinchot encountered a wide array of opinions on his choice of professions from European foresters as well. Because there were no American forests under active management, every major forester Pinchot met in Europe had a different opinion on what he should do to bring scientific forestry to the United States. No one, however, favored working for a government that had no land under management.¹¹ Brandis, for example, thought the best course of action for his student would be to manage a large tract of private land and demonstrate that forestry could be profitable.

While abroad, Pinchot began to reconsider his decision to work for Fernow. He was heavily influenced by the opinions of his father, Brandis, and Sargent in this regard. His father simply did not trust Fernow, and Sargent held him and his work in very low regard.¹² Brandis, Sargent, some of the foresters who Pinchot met in Europe, and even Fernow, believed he needed a thorough

education to succeed in America, and strongly urged him to stay in Europe for at least two years. He instead listened to his father and planned to return after only a year of schooling. To establish himself quickly in American forestry, he formulated a plan that did not include working under Fernow. Pinchot wanted instead either to secure a job as a forester on private lands or receive an appointment as a government forestry agent that would enable him to continue his studies and learn more about forestry while traveling the United States and Europe.¹³ Though he had decided not to work for Fernow, Pinchot did not cancel his arrangement with the chief forester.

By this time, Pinchot's trepidation about a future in forestry had faded. Fernow's pessimism gave the young man a moment's pause,¹⁴ but his time in school and with Brandis changed his outlook. Now, nothing seemed unattainable, at least not as long as his family shared his commitment to the cause. "This has got to be a forestry family," Pinchot informed them while studying in Europe. "In fact, I'd like to make the whole family into foresters."¹⁵ He asked his father and brother to come to Germany to meet with Dr. Brandis and travel with them a bit so that they may "form an idea of just what forestry in Europe means." He reminded them that they could not do so if they remained at home.¹⁶ He even insisted his parents read William Schlich's *Manual of Forestry* so they could form "the correct idea" of forestry.¹⁷ He discussed with his father writing a primer of forestry for the general public and establishing a forestry school, possibly at Milford.¹⁸ When James was not giving advice on everything from etiquette to the benefits of French culture, he conferred with his son about making the grounds at Grey Towers available for Gifford's experiments in tree planting.

Pinchot learned much more than just the methods of his new profession during his European stay. He formed life-long opinions of his European counterparts. French and English forestry students impressed him as little more than disrespectful, disdainful drunkards, and German foresters proved more interested in hunting than practicing their craft.¹⁹ In contrast, Pinchot's time with Swiss foresters proved most instructive in how forestry operated in a democracy. Forstmeister Meister, in charge of Zurich's Sihlwald forest, also served as head of the city's liberal party, was the president of the largest Swiss newspaper, held the rank of Brigadier General in the Swiss Army, and was writing a book. On a different occasion, Pinchot watched in amazement as the founder of Swiss forestry, Professor Landoldt, happily dirtied himself while demonstrating the proper technique of tree planting to his students.²⁰ Pinchot would later emulate him by doing the same hard field work as his rangers, often out-shooting and out-riding them as well.²¹

Landoldt advised the young man on how to bring forestry to America: "Go slow with [the] f[orest] org[anization] in America. First mark out state forest[s], then protect them, then [establish a] forest school."²² Consciously or

not, Pinchot followed Lamboldt's suggestion to the letter. Though the first national forests were established in 1891 just after Pinchot's return from Europe, as Secretary of the National Forest Commission in 1897 he helped establish new ones and worked for the passage of the Forest Management Act to bring the forests under scientific management. Three years later he and his family established what would become one of the leading forestry schools in the world.

Collectively, though, Pinchot's experiences in all three countries taught him that European techniques could not be transplanted wholesale to his native country, nor were all of them applicable to American conditions.²³ Instead, European methods were "chiefly valuable as a sort of guide in the study of new conditions and the devising of new methods," he informed his father.²⁴ He would adapt the methods to create an acceptable style of forestry in the United States, one that paid "a respectable income" yet left the forests "as picturesque as though left wholly alone." Pinchot knew who his potential constituents were; he had "to conciliate the doctors, sportsmen, and practical men who look to the money return."²⁵ The well-groomed forests of Europe held little aesthetic appeal, but, he conceded, what they lacked in looks, they made up for in efficiency.²⁶ Ultimately, he declared, his way would prevail: "I see no reason why our Forestry system should not be as unlike and superior in the end to the European as our [a]gricultural methods are."²⁷

While overseas, Pinchot's family kept him abreast of the latest developments in the American forest preservation movement by sending newspaper clippings and magazines such as *Century*, *Forest and Stream*, and Sargent's *Garden and Forest*.²⁸ He did not always find things back home to his liking. Knowing that his future employment as a forester depended in part upon what the national government did, the inability or unwillingness of Congress to take action to protect forests and watersheds often left him frustrated. One evening he read material "concerning our insane forest policy in [the] U.S., whereby I was made as mad as I usually am at such times." His correspondence with Farnow, Sargent, his father, and others also kept him informed while giving him varying perspectives on events.²⁹

Feeling pressured by his father to return to the United States, and himself eager to begin his career,³⁰ Pinchot left the forestry school at Nancy halfway through the program and before gaining a thorough knowledge of "the sciences underlying forestry." He later lamented he was "no more than half-trained," but he left for home with the courage, purpose, and conviction of a missionary.³¹ Shortly after his return in 1890, at Farnow's invitation, Pinchot introduced himself to members of the American forestry movement by presenting a paper on European forestry policy at the December meeting of the American Forestry Association.

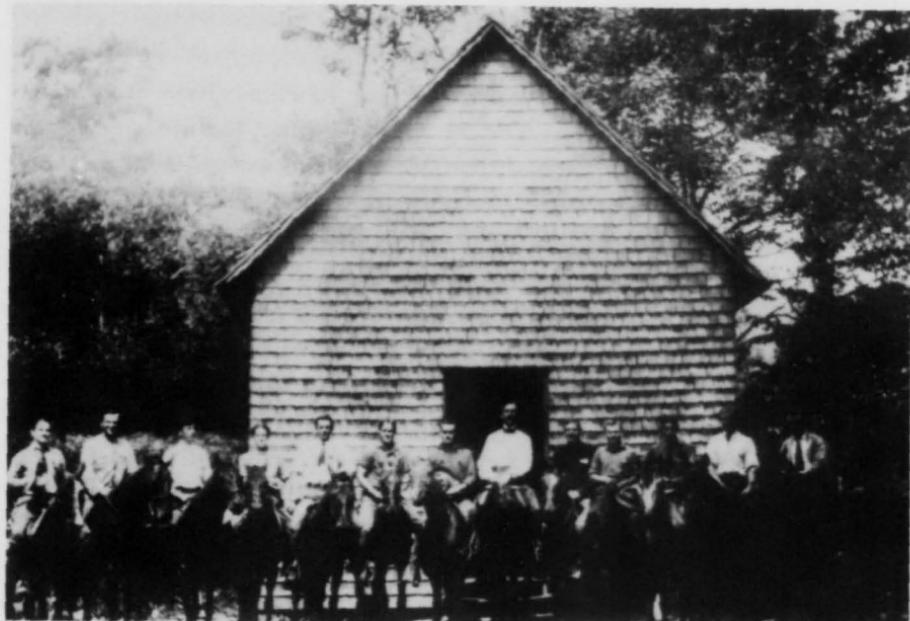
In “Government Forestry Abroad,” Pinchot sketched forestry developments around the world but focused on the three European countries of which he had first-hand knowledge. He praised the German forestry theory of the state’s duty to preserve forests for their economic value, but warned against blind imitation of their “advanced and minute forest methods” in America primarily because of the many differences in national character and land conditions. France received praise for its high annual revenues from public forestry and for cultivating local support by not having a “hands off” preservation approach. However, the republican traditions and flexible management so evident in Switzerland, he said, presented the best model for America.³²

Meanwhile, Pinchot continued postponing telling Fernow of his decision to seek a forestry management position outside the Bureau of Forestry. Sargent and Brandis urged him not to take what would be predominantly a desk job because it would neither help him nor forestry in general. Pinchot’s negative opinion of Fernow began hardening about this time. A trip together through the Southern forests in January 1891 led the young forester to conclude that Fernow had no interest in administering forests and was not temperamentally suited for leading the fight for forest administration. In sum, he wrote, Fernow was “a very queer man,”³³ who “assume[d] simply that he knows it all.”³⁴ Their friendship nearly ended during the trip, and relations remained strained after that.³⁵ Yet Pinchot was not beyond continuing the professional relationship in order to further his own career.³⁶

Pinchot found a way to diplomatically reject Fernow’s offer in late 1891 when George Vanderbilt offered him a chance to undertake practical forestry at his sprawling Biltmore Estate in North Carolina. Pinchot informed Fernow that since there was no legal obligation to work for him, he would decline the offer. Fernow conceded Pinchot this, but he made his feelings evident when he called Pinchot’s decision a “defection.”³⁷ He had envisioned grooming Pinchot to replace him not only as chief, but as Executive Secretary of the American Forestry Association, one of the most powerful positions in the forestry movement. In Fernow’s opinion, Pinchot would be of greater value if he devoted his time and energy to publicizing the cause of forestry and gaining support for implementing forestry management in the reserves.³⁸ He did not hesitate to tell Pinchot how he felt about his decision, and to inform him that in his opinion—for “reasons entirely outside of yourself,” he cautiously qualified—the Biltmore experiment would not work. But just in case Pinchot succeeded, Fernow was ready to take some of the credit: “Whatever you may begin, however, or accomplish, you may feel assured that I shall take an interest in you from the fact, that, however small my part, I did have part in directing you to your forestry studies.”³⁹

The experiment at the Biltmore Estate represented the first attempt at scientific forestry management in the United States; public forestry, on the

Courtesy of the Forest History Society, Durham, North Carolina



Students on horseback at first schoolhouse in the Pink Beds, Biltmore Forest School. Dr. Carl A. Schenck is framed in the doorway.

other hand, would not begin until 1898 when the Department of Interior's General Land Office placed the national forest reserves under active management. There, in the mountains of western North Carolina just outside Asheville, Vanderbilt built his version of a baronial manor, one that was to be self-supporting and self-sufficient. He hired renowned American architect Richard Morris Hunt to build the house and the founder of American landscape architecture, Frederick Law Olmsted, to design the gardens and grounds.

Due largely to Olmsted's vision, the Biltmore Estate and surrounding Pisgah Forest would become known as the Cradle of Forestry. Vanderbilt hired Pinchot in December 1891 as the estate's forester to oversee his 3400-acre Biltmore Forest at the suggestion of Olmsted, a friend of James Pinchot's and an occasional guest at Grey Towers.⁴⁰ Olmsted had persuaded Vanderbilt to use the land to demonstrate the profitability of practical forest management, and assured him that Pinchot was the man for the job. In January 1892, Olmsted examined the estate's grounds with Pinchot, advised him on his duties, and discussed forming a library and collection of woods with a view towards eventually establishing a forestry school there.⁴¹ The notion of a forestry school struck a cord with Pinchot and his father, both of whom plotted to establish one once Gifford's work generated enough public interest in forestry and had created a demand for foresters.⁴²

As the first American-born forester, Pinchot found himself in a unique position at a pivotal moment in forestry history. But Pinchot's limited education in forestry left him largely ill-equipped for the task at hand. He took the Biltmore position with barely a year's schooling in France, had only scant knowledge of the forests and trees of his native country, and little practical experience as a forester. Yet, he had the unbridled enthusiasm, courage, and determination to overcome these obstacles and prove Fernow wrong, and Brandis, his father, and his other supporters right. Forestry could—indeed, must—pay if it was to succeed in the United States.

To ensure triumph over his main detractor—and to Pinchot, to not become the most respected forester in America, the first to successfully introduce scientific management practices while forging a new style of forestry in America, meant failure—he drew upon all available resources.⁴³ He met or corresponded with Olmsted and Sargent about the plans and work on the estate. He wrote Brandis about every aspect of the work in great detail, with Brandis following the progress on a map Pinchot had sent. Much to Brandis' frustration, Pinchot refused to fully employ accepted European methods.⁴⁴ He also consulted with his father on business matters at the Biltmore, including choice of personnel and labor and land negotiations, even asking if he would visit to help with the task.⁴⁵

Pinchot's efforts in the Biltmore's forests met with mixed results, but he generated interest in the viability of forestry while making a name for himself. He escorted his own and Vanderbilt's prominent visitors around the estate, showing them the work being undertaken. Pinchot got the word out about his endeavors by exhibiting at the Columbian Exposition in Chicago and publishing a booklet on his work at Biltmore. Press coverage attracted young men interested in learning more about forestry, or, at the very least, in pursuing a job that took them outdoors. Henry Graves, one of Pinchot's friends from Yale, numbered among those who came to work under Pinchot and be introduced to forestry.

The interest and inquiries about forestry led Pinchot to first get directly involved in forestry education while at the Biltmore Estate. He began teaching forestry on an informal basis to two of his employees in the estate's Forestry Department, making him the first instructor of practical forestry in the United States. He lectured in the evenings after work, assigned readings, and then discussed them at the next meeting.⁴⁶ Even when he was away from Asheville, Pinchot and his proteges would keep up this rudimentary schooling via correspondence. He also established a department baseball team as a way to encourage an *esprit de corps* among the employees. In later years, the Yale Forestry School summer students in Milford would field a team for similar reasons.

Pinchot left Biltmore in 1895 to pursue other forestry interests, including working with Graves in the Adirondacks for other wealthy patrons. Vanderbilt hired Dr. Carl A. Schenck, a German forester whom Brandis recommended, to replace Pinchot as the on-site forester. That same year, Vanderbilt acquired the Pisgah Forest, giving him over 100,000 acres, all in desperate need of Schenck's attention. Pinchot continued serving as forestry supervisor at the Biltmore until his appointment to the Division of Forestry in 1898. Pinchot then hired his old subordinate Schenck as a forestry agent to conduct surveys and studies in the South.

Schenck was faced with the formidable task of revitalizing badly cutover and burned land. He hired a handful of young men to help him manage and patrol the sprawling holdings. Responding to his apprentices' desire to learn more about forestry, Schenck picked up where Pinchot had left off and started teaching them informally as they worked the land. Two years later, in 1898, with Vanderbilt's permission and Pinchot's encouragement, he formally established the Biltmore Forest School, essentially but not always a one-man school patterned after the German master schools.⁴⁷ Instruction in the one-year program was both theoretical and practical, and emphasized actual field preparation and participation in the many activities involved in the management of a large forest property. Many of his students were the sons of lumbermen and land owners wanting to learn more about the lumbering business before entering it. Others wanted to enter government work and eventually became outstanding federal and state foresters. Overton Price, Pinchot's longtime assistant in the bureau and Forest Service, was among Schenck's first students.

Like Pinchot, Schenck firmly believed that for forestry to succeed in the United States, it must prove profitable. Simply put, the trees must command a high enough price to make production pay. When Schenck arrived in the United States in 1895, he found that forestry was not considered a good long-term investment because of a belief in a seemingly inexhaustible supply of virgin timber. Only when the federal government and private businesses realized that there was a limited supply did forestry management become a viable option. Schenck and Pinchot also believed that German forestry theories were not applicable in America because foresters needed to examine local conditions and respond to them.⁴⁸

Yet there were differences between how the two men approached forestry. Schenck summarized the differences between himself and Pinchot by pointing to Pinchot's training in France, which stressed silviculture (the study of trees and their cultivation), and that of his own German forestry education, which emphasized economics (making forestry profitable as a business) as the greater priority. The chasm between the two foresters only widened after Pinchot established the Yale School of Forestry in 1900. Schenck favored having his students work for private landowners to gain practical experience before working

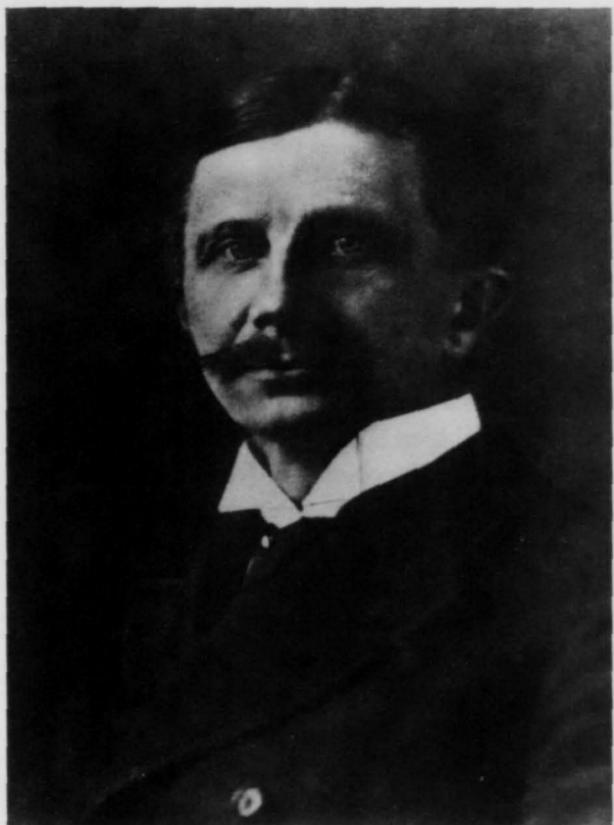
for the government.⁴⁹ He openly criticized some of Pinchot's policies in his lectures and disapproved of the attacks on major lumbermen that Pinchot and President Theodore Roosevelt made. Schenck wanted Pinchot's bureau to co-operate with the lumbermen instead of antagonizing and attacking them as "enemies" of the nation. During one visit to Asheville, Pinchot and Schenck, while standing along the tracks of the Southern Railway in the Biltmore Nurseries, argued heatedly for over an hour about the best way to institute reforms on lumbering policies. According to Schenck, when Pinchot learned that in his Biltmore exams Schenck gave greater weight to a knowledge of logging and lumber than of any branch of "scientific" forestry, he called him an antichrist!⁵⁰

Pinchot soon showed his potential for vindictiveness towards those with whom he disagreed, especially over issues of the government's forest policy. He secretly worked to undermine Schenck's professional standing, and then his school. When Schenck published an article in 1902 calling for a timber investigation of the entire South in order to better aid the government in forming its conservation policy, Pinchot persuaded a mutual friend, the respected geographer Henry Gannett, chief geographer of the United States Geological Survey, to write an article denouncing and ridiculing Schenck's suggestion. Schenck found out about Pinchot's involvement when Gannett showed him the letter.⁵¹

These philosophical differences, and the clash of these men's conflicting personalities, led Pinchot to fire Schenck as a federal forestry agent in 1902, and also prompted Pinchot to ask Vanderbilt to close down the Biltmore School.⁵² Schenck recalled at around 1903, Pinchot "wrote a letter to Vanderbilt asking him to close the Biltmore Forest School because its teachings did not conform to his views, because they were antagonistic to the development of forestry in the United States, and because they were producing a class of foresters derogatory to the graduates of the Yale Forest School." He had made these criticisms despite having hired several of Schenck's graduates, some of whom scored extremely well on the federal civil service exams and had done outstanding work for the bureau. Soon after Vanderbilt showed his forester Pinchot's letter, Schenck ended the friendship, deeply wounded by the series of attacks by his friend.⁵³

When Vanderbilt expelled Schenck from the estate in 1909 over a contract disagreement, Schenck's approach to teaching forestry was put to the test. He literally took the school on the road, touring six working fields in the United States and Europe in a twelve-month period to show his students lumbering and forestry in action and lecturing to them while in transit. He kept the school going for four more years before enrollment dwindled to the point that it was no longer profitable. Since his school did not grant professional degrees when most others were, interest in it naturally waned. Schenck would

Courtesy of the Forest History Society, Durham,
North Carolina



Bernhard E. Fernow, a German-born scientific forester and head of the Division of Forestry from 1886 to 1898, paved the way for conservation in America with many unheralded achievements. He was not only a pioneering forestry educator in America, but in Canada as well.

mulation of a federal policy for managing the reserves. Creation of those reserves undid years of Fernow's efforts to build support slowly on Capitol Hill for scientific forest management. However, their creation presented Fernow with an opportunity to introduce the management practices he favored through another medium—education.

Fernow took up the directorship of the New York State College of Forestry at Cornell in 1898 after twelve years in government employment. Though Cornell was not the first forestry school, it was the first to offer a college degree in forestry; a proposal for a national forest school to be placed in Minnesota had failed to gain Congressional support in 1882.⁵⁴ Pinchot had drawn up a proposal for a two-year post-graduate program at Columbia University, and also one for a forest school at the New York Botanical Garden in 1895,

have had to close it down the following year with the outbreak of World War One and his recall to active duty in the German Army. Nevertheless, in all he instructed over 350 students, many of whom went on to be leaders in both public and private forestry and to carry forth his beliefs.

Schenck was not the only German forester-turned-educator with whom Pinchot had disagreements. The tense relationship between Pinchot and Fernow grew only more so by the late 1890s. Fernow resented Pinchot's involvement as Secretary of the National Forest Commission in the creation of some controversial national forest reserves in 1897, and in the for-

neither of which came to be.⁵⁵ Pinchot and Fernow, who favored civilian foresters, had opposed a plan put forth in 1897 by the National Forest Commission to establish a forestry school at the United States Military Academy at West Point. Passage of the Forest Management Act that same year placed the forest reserves under control of the Department of Interior, and instantly created a demand for trained civilian foresters. Fernow prepared to answer that call by going to Cornell.

Never comfortable in the political arena as bureau chief, Fernow was more than happy to develop a college program and forestry curriculum.⁵⁶ As early as 1887, he had outlined a course of technical instruction in forestry, but did not push for forestry schools then because there was no work for professional foresters. Fernow believed that economic conditions did not yet make forestry profitable or even feasible, and thus establishing a school of forestry would make no sense. Instead, he patiently lobbied Congress and concentrated on research and investigation during his tenure as chief in order to provide future foresters with essential data.

Seven years later Fernow delivered a series of lectures on forestry at the Massachusetts Agricultural College, believed to be the first series of its kind in the United States.⁵⁷ The following year, in 1895, he appeared before Congress in support of a bill to establish the "National School of Forestry" within the Agricultural Department. The school would grant travel scholarships so students could travel to Washington to pursue special studies in "forestry sciences"—soil physics, botany, and allied disciplines. Supporters designed the measure to meet the "emergencies of the future," or, in other words, a temporary measure to meet the expected demand.⁵⁸ The Forest Management Act changed that status, piquing interest in the young profession around the country just as Fernow and Schenck prepared to open their schools.

Cornell was a private university, but its forestry college was state-supported. That would prove its undoing. Fernow's prickly Prussian personality won few friends in the New York State Legislature, which controlled the school's budget and, therefore, the school's fate. His efforts were not only hindered from the start by a lack of proper funding from state politicians, but also poor or nonexistent facilities at the school, and just plain bad luck in establishing the thirty-thousand-acre demonstration area at Tupper Lake in the Adirondacks. Moreover, Pinchot personally hurt the school by siphoning off its best students and faculty for his bureau. (With so few properly trained men in the country, Pinchot had little choice but to take men from where he could.) Lastly, under political pressure from wealthy camp owners unhappy with the clear-cutting activity in the nearby school forest, the state legislature closed the school in 1903 before Fernow could put its demonstration forest on a firm business footing and demonstrate forestry's profitability. A few years later, after serving as a guest lecturer at the Yale School of Forestry and starting a

forestry program at Pennsylvania State College, Fernow left the United States to start a new program at the University of Toronto, a defeated and underappreciated man.⁵⁹

It is a vindication for Fernow, however, that a major reason for the collapse of the Cornell program came because of the need “to earn a revenue,”⁶⁰ as prescribed by the state legislation that established the school, and not because of his failure as a scientific forester. Contrary to what Pinchot claims in his autobiography, later examinations of the Cornell Forest work showed Fernow was on the right track with his plantations and most likely would have turned a profit. Pinchot and Graves, on the other hand, have been criticized for the selective cutting method they employed in their Adirondack work at W. Seward Webb’s Nehasane Park done around this time in part because the forest failed to reproduce itself, but primarily because the second cutting done between 1913 and 1918 was not distinguishable from an ordinary logging operation.⁶¹

Though Fernow’s Cornell program collapsed rather ignominiously after only five years, its impact was considerable. While director of the school, Fernow and his students started the first professional forestry journal, *Forestry Quarterly*, known today as the *Journal of Forestry*. Also, the curriculum he used there became the standard for other forestry schools to follow. In his book, *Economics of Forestry*, published while teaching at Cornell, he expanded his earlier ideas about technical instruction and elaborated on the primacy of political economy in forestry. One forestry historian points to this publication as the “real beginning of the standardized curriculum of American instruction in forestry.”⁶²

Fernow’s impact, however, was not as far-reaching as that of his professional rival, Gifford Pinchot. On February 3, 1900, after a lengthy family conference, the Pinchots decided to give Yale University \$150,000 to establish a full-fledged school of forestry and to offer use of woodlands surrounding Grey Towers for its summer field work.⁶³ The Yale School of Forestry would offer a two-year master’s program, the first of its kind in the country. In conjunction with the summer program for the incoming class, a separate general forestry instruction program suitable for owners of woodlands, forest rangers, and school teachers—open to women as well as men—would also be offered.⁶⁴ Yale discontinued the general instruction program after 1908, due to a drop in demand for such a course.

The decision to endow the school ended nearly a decade’s worth of familial dreaming and scheming between parents and son. Discussion on the need for a school had begun in 1890 while Pinchot was studying abroad, and the idea continued to evolve after that. In 1894, James confessed to his son he was anxious for the family to be connected with the first forestry school in the United States, and that he had spoken with a Pennsylvania senator about a

plan. Gifford opposed locating the school near Milord because he felt the forests of Pike County lacked the quality or conditions for instructive field work, and because he did not want teaching to distract him from the greater task of bringing forestry to America.⁶⁵ Two years later, feeling more secure with his position in the forestry movement and more confident in his abilities as a forester, Pinchot met with the president of Yale University about establishing a forestry department there and contemplated becoming its director briefly before reconsidering its implications.⁶⁶

When Pinchot and Henry Graves, his right-hand man in the Division of Forestry and a fellow Yale graduate, discussed the need for a forestry school, they concluded they could employ men faster by putting those who already had the desired, well-rounded education in the general sciences through a two-year forestry program. During the first two years of Pinchot's tenure at the Division, his office had hired college students and graduates interested in forestry as student assistants to help with administrative duties and field investigations; this was an inexpensive way to expand the staff. The two men knew how much more capable these students would have been after even one year of formal schooling in forestry.

But their desire to establish a school was not strictly altruistic. They wanted the Yale program to supersede Fernow's school at Cornell. The two Americans, Graves wrote later, "both felt that Fernow was bearing too close to the German pattern of a forest school and to teaching German methods of silviculture" at Cornell.⁶⁷ Pinchot recalled, "We had small confidence in the leadership of Dr. Fernow or Dr. Schenck. We distrusted them and their German lack of faith in American Forestry. What we wanted was American foresters trained by Americans in American ways for the work ahead in American forests."⁶⁸ He neglected to remind his readers that most of the forestry theories and books initially used in the United States came from Germany; that his mentor Brandis was German; and that Graves and other prominent early American foresters had received their training in Germany as well.

Nevertheless, Pinchot felt that his two European rivals had little understanding of how a democracy worked, or what roles foresters could play in a democratic society. Never mind that before Fernow went to Cornell, he had been in this country for over twenty years, working the halls of Congress for forest preservation. Pinchot argued—and Graves agreed—that Fernow's German training, like Schenck's, prevented him from properly understanding American forest conditions. Fernow's failure to get the federal government involved in field work, coupled with his emphasis on research during his twelve-year tenure as head of the division, only reinforced Pinchot's disdain. Furthermore, he also thought that both Germans were far too pessimistic about the prospects of instituting forestry in America on a national level. Fernow's support of implementing forestry mainly on the state level and Schenck's emphasis on private forestry further cemented this belief.⁶⁹

To Fernow, Pinchot's views were rather parochial. He believed that Pinchot and his followers "were prematurely claiming the prerogatives of an American forestry." He said that even an American forester must look to German theory and practices to provide a foundation for American forestry. Fernow believed that forestry, as an applied science, should conform to no national or continental boundaries, but should instead be undertaken on a regional basis to work most effectively. Fernow argued in favor of collecting data as he had done while chief of forestry instead of placing forests under management prematurely. "Sound forestry," he said, "studie[s] first the physical environment and its most appropriate use."⁷⁰ Proper management, for which verified data was needed, could eventually make forestry a national policy. It was upon this foundation, laid by Fernow, that Pinchot built the Forest Service.

From the outset, the Yale School of Forestry had advantages that Fernow and Schenck must have envied. First of all, Graves left his position as the Division of Forestry's assistant forester to become dean of the school, thus strengthening its reputation at the outset from the beginning, for Graves was arguably the best trained and educated American forester in the country. Unlike Pinchot, Graves had familiarized himself with American conditions by completing several months of practical and investigative work before beginning formal studies in Europe. He arrived at the University of Munich knowing in which areas of forestry he needed to focus.⁷¹ A quiet, non-descript man who had taught school before taking up forestry, he was temperamentally better suited for the intimate halls of academia or solitary fieldwork than the political maelstrom of the Washington office, and he proved to be an outstanding educator. He retired in 1939 from Yale as one of the most prominent men in American forestry education partly because of his pivotal role in establishing such a prestigious program, but largely because of his extensive committee work on education standards over the years.

The Pinchot family's full support of the school eliminated other potential problems. The initial endowment of \$150,000, which they soon doubled, allowed Dean Graves to put the school together deliberately and properly. (By comparison, Fernow's annual budget at Cornell had been \$10,000, exclusive of the purchase price of the College Forest.) The private endowment avoided reliance upon a state legislature for funding, one of the problems that had plagued Fernow's efforts in New York. Moreover, the Pinchot family quickly covered budget shortfalls, relieving the faculty of considerable worry.⁷² And unlike Schenck's school at Biltmore, Yale was not subject to the whims of one man who might arbitrarily oust it from its worksites. Whereas Fernow was forced to borrow space and inadequate equipment from other departments, and Schenck had to build from scratch, Yale students and faculty received separate quarters for the school immediately. Though Schenck's students originally enjoyed the advantage of working in the surrounding woods daily, that

Courtesy of Jesse Buell Collection, USDA Forest Service, Grey Towers NHL,
Milford, Pennsylvania.



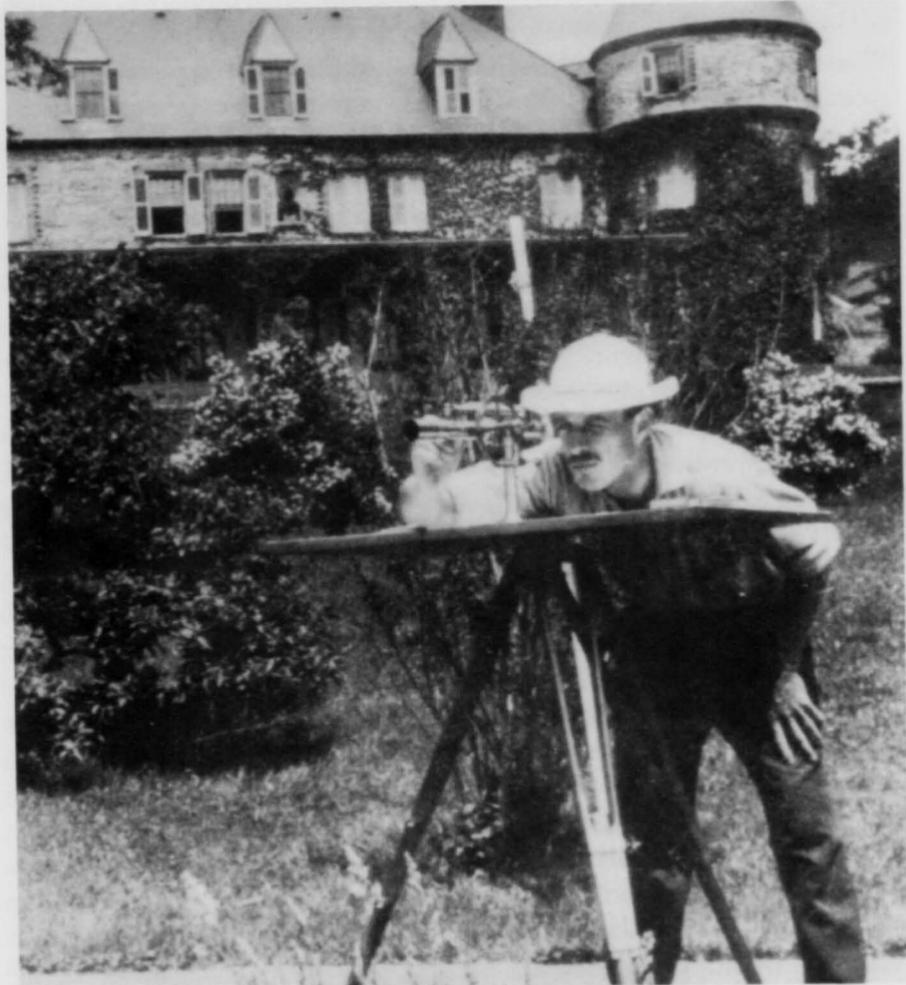
James Pinchot (far left) and son, Gifford (2nd from left), in front of Forester's Cottage with Yale Forestry School students in Milford, PA.

asset was soon enough available for Yale students near New Haven through an arrangement made possible in part by the Pinchots.

James Pinchot eventually made more than 1700 acres at Grey Towers available for use as a summer school. He constructed buildings, including a small library and a classroom at the campsite, and also built a lecture hall in the town. He purchased tents for the Yale students to live in. In 1903, he established the Milford Experimental Station, to be run by the school's dean. James provided office space for the station in the town's library, which the family had also built. The Milford site operated as Yale's primary fieldwork location for nearly twenty-six years, educating over 500 foresters. Yale closed the site when the land no longer met the students' fieldwork needs.⁷³

If North Carolina's Biltmore Estate and Pisgah Forest are the "Cradle of Forestry," then Pennsylvania's Grey Towers must be considered its "Nursery." Here, under the delighted gaze of the Pinchot family, the Yale faculty nurtured and educated much of the first two generations of American foresters. Here, for seven weeks every summer, young men from any number of colleges came for the summer course in forestry, or began their two-year stint at Yale. Here, they learned surveying on the front law of the estate or forest mensura-

Courtesy of Jesse Buell Collection, USDA Forest Service, Grey Towers NHL,
Milford, Pennsylvania.



A student of the Yale Forestry School in Milford, PA, using surveying equipment on the east lawn of Grey Towers.

tion in its woods; skinny-dipped in the Sawkill Falls much to the shock and amusement of the locals who came to watch; walked to and from town singing songs about faculty members; played the local baseball clubs or held tennis tournaments on the two grass courts in camp; dined with the Pinchots at least once at the main house; gathered around a huge bonfire at night to listen to Gifford and other foresters discuss what forestry meant to the nation's future; and all while forging the *esprit de corps*. Gifford first learned about from Brandis and had tried to instill in his employees at the Biltmore.

The greatest advantage for the Yale school, of course, was that it had the unwavering devotion and support of the head of the federal government's

forestry program. At one point, Pinchot wanted to bequeath nearly everything in his will to the school, but his father convinced him it was too large a sum of money to let pass out of the family.⁷⁴ As a non-resident professor, Pinchot lectured on the government's role in forestry, and often visited the summer school to talk with the students. He recruited some of the government's top scientists as special lecturers, and solicited donations from America's wealthiest citizens to support the school.⁷⁵ In 1905, he made direct appeals to the leaders of the National Lumber Manufacturers Association to provide financial backing for an endowed chair of "applied forestry and practical lumbering" at Yale. His solicitations resulted in Frederick E. Weyerhaeuser's spearheading efforts to finance it. Though Pinchot spoke out against the "lumber barons" and "land skinners," he was not adverse to making deals with them for the benefit of his school so that it might extend its influence.

Through Graves, Pinchot's influence and ideas about forestry and the role of a forester permeated the school's curriculum and philosophy. Yale wanted, according to the school's first annual report, to graduate "thoroughly trained experts who are competent to organize and administer the work in Government, State, or private forests, or to pursue the necessary scientific study of our forests." They would be "called upon to assist in the organization of the work of forestry on Government, State, or private tracts; to direct legislation; to create public sentiment in favor of forestry; to pursue the scientific study of our trees and forest;" and to solve the difficult problems connected with forests while undertaking "practical management of forests of every character and size."⁷⁶

Beyond such immediate goals for the school and its graduates, Pinchot hoped to use the school and his government position to build the forestry profession as part of the broader conservation effort then underway in the Roosevelt Administration. To achieve this, he launched a two-pronged attack, one from his home and the other at Yale. He and his parents courted Congressional support for the transfer of the forest reserves to his bureau by entertaining important politicians at dinners in their Washington home.⁷⁷ In 1900, Pinchot established the Society of American Foresters, an organization of professional foresters to rival the Forestry Club that Fernow had formed in late 1899.⁷⁸ Early SAF members fondly dubbed themselves the "Baked Apple Club" because of the baked apples, gingerbread, and cold milk served at the weekly meetings held in the Pinchots' home. Members came almost exclusively from the Division or Yale's faculty. Associate members, who often gave lectures at the meetings, came from the fields of science related to forestry, or were leading supporters of the conservation movement.⁷⁹ At a March 1903 meeting, associate member President Theodore Roosevelt addressed the young men on why their work was so important. He reminded the foresters that the nation's forest policy was not preservation of the woods for their beauty nor

for the protection of animals, but "for the making of prosperous homes. . . . Every other consideration comes as secondary."⁸⁰

Of primary concern to Pinchot was the expansion of the influence of the Yale School of Forestry. In the summer of 1902, he attempted to make it the centerpiece of a general government scientific and conservation training program. He wanted to establish a School of Irrigation at Yale with Chief F. H. Newell of the United States Bureau of Reclamation as its dean, and to bring the chief of the United States Biological Survey there to lead its zoological work. At the same time, Pinchot was serving on a committee investigating the feasibility of consolidating government bureaus to eliminate overlapping responsibilities and was lobbying Congress for the transfer of the national forest reserves to his bureau in the Department of Agriculture. Had he succeeded on all fronts, the federal government's conservation policies would have been dictated from his office, and its conservation troops would have come from one school. Pinchot would not only have been the school's guiding light but also the chief employer of its graduates.⁸¹ When Newell declined the offer, and Congress did not approve the bureaucratic restructuring, the idea fell through.

The failure of Pinchot's sweeping plans for conservation did not affect the Yale School of Forestry. On the contrary, its influence quickly spread throughout the emerging forestry profession. Most of its graduates entered government work, either on the state or federal level; the first five chief foresters of the United States Forest Service were either faculty members or graduates of Yale's School of Forestry.⁸² Consequently, the views on forest policy and forestry taught at Yale essentially were those of the Forest Service's. Some graduates left government service to teach, while others left New Haven immediately to take teaching positions at new schools, thereby helping to disseminate the Pinchot philosophy of forestry across the United States, even internationally. By 1950, Yale could proudly and rightfully boast of having placed its forestry graduates on the faculty of over fifty American universities, as well as dozens of others throughout the world.

Between 1897, when provisions for the protection and administration of the forest reserves were first made, and 1905, when they were placed under the control of the Department of Agriculture, federal activities markedly helped the cause of technical forestry and the need for schools. When Pinchot took charge of the Division of Forestry in 1898, the Division existed largely to dispense information on trees and conduct wood studies. Pinchot quickly reoriented its work towards practical management. In October 1898, he issued Circular 21 in an effort to persuade private land owners to set up management plans for their forested lands by using the division's foresters. Within three years, appropriations rose to over \$185,000 in fiscal year 1902, with a staff of 179, 81 of whom were student assistants. The number of forest reserves increased, especially after Theodore Roosevelt became president in 1901.

The implementation of federal and state forestry combined with the expansion of private forestry increased the demand for properly trained men and for more schools to train them. The proliferation of schools of forestry after 1900, however, created several problems. The varied quality of education and lack of standards became the most critical threat to the future of professional forestry. In 1909, Pinchot called a conference "to consider the aim, scope, grade and length of curriculum," and had a committee appointed to draw up a comprehensive plan. Included on the committee were Henry Graves, dean of Yale's school; Fernow, now dean at the University of Toronto; Richard T. Fisher of Harvard (a Yale Forestry grad); Filibert Roth, whom Pinchot had hired away from Cornell, but was now Dean of Forestry at the University of Michigan; and Forester Gifford Pinchot of the United States Forest Service. Representatives of sixteen schools at a 1911 conference considered and amended the committee's findings, with a final report, entitled "Standardization of Instruction of Forestry," being issued a year later in *Forestry Quarterly*. It remains a milestone in forestry education.

The report stated that "professional training must include a substantial general education, as well as a well rounded course in all branches of technical forestry, and that the standard must be high. Emphasis was placed on a training that would create a body of professional men who could formulate principles and do the constructive work required to put them into operation." This dovetailed with the Forest Service's belief in giving rangers and forest supervisors greater autonomy in decision-making, and with the high professional standards created by Pinchot that they were expected to meet. The list of forestry subjects, with the number of actual hours in classroom or laboratory assigned to each, was similar to the plan Fernow had outlined in 1902.⁸³ Each school, of course, did not have to adopt the curriculum in its entirety, but their cordial reception of it helped to lay the foundation for a stable and flourishing profession.

The work done by Carl Schenck, Bernhard Fernow, Henry Graves, and Gifford Pinchot in forestry education helped establish a new profession and set its standards. The Biltmore Forest School, the Cornell program, and the Yale School of Forestry produced competent foresters from the outset at a critical time in forest history. Schenck's one-year program quickly put trained men into the employment of lumber companies, helping to slow the companies' wasteful practices by increasing their awareness of what their methods were doing to the lumber supply. Fernow's theories on education and curriculum, first put into practice at Cornell, served as a model for all four-year programs that followed. Pinchot's influences and Graves' teachings assured the uniformity of Forest Service policies well into the mid-twentieth century. But it was the participation and generosity of the Pinchot family, through its endowment of the Yale School of Forestry and its gifts of land, time and effort,

Courtesy of the Forest History Society, Durham, North Carolina



(Left to right) Yale Forestry Professors, James W. Toumey, Gifford Pinchot, and Henry S. Graves in front of Sage Hall (School of Forestry), Yale University, 1926.

that ensured the success of forestry at a time when the profession was in its infancy, and its future in doubt.

Notes

1. Gifford Pinchot, *Breaking New Ground*, with an Introduction by George T. Frampton (New York: Harcourt, Brace, and Co., 1947; reprint, Washington, DC: Island Press, n.d.), 2.
2. Char Miller, "The Greening of Gifford Pinchot," in *Gifford Pinchot: The Evolution of an American Conservationist* (Milford, PA: Grey Towers Press, 1992), 50.
3. Miller, "Greening," 52-53. Pinchot's other biographers fail to note that James' participa-
- tion in lumbering may have been his motive, and instead only mention his concern for the destruction of American forests in general. See: Harold T. Pinkett, *Gifford Pinchot: Private and Public Forester* (Chicago: University of Illinois Press, 1970), 16; and M. Nelson McGahey, *Gifford Pinchot: Forester-Politician* (Princeton: Princeton University Press, 1960), 4.
4. Pinkett, *Public Forester*, 16.
5. Miller, "Greening," 52.
6. Pinchot, *Breaking New Ground*, xv; Gifford

- Pinchot Diaries, 12 November 1889, Gifford Pinchot Papers, Manuscript Division, Library of Congress, Washington, DC.
7. Pinchot, *Breaking New Ground*, 7, 8-9.
8. Pinchot Diaries, 5 January 1889, Pinchot Papers.
9. Andrew Denny Rodgers, III, *Bernhard Edward Fernow: A Story of North American Forestry* (Princeton: Princeton University Press, 1951; reprint, Durham, NC: Forest History Society, 1991), 25-26.
10. Pinchot, *Breaking New Ground*, 5; Pinkett, *Public Forester*, 17.
11. See: Pinchot Diaries, 1 January, 18 March, 24 March, 10 April, 28 and 29 April, 1 May, 2 June, 15 July, 22 August, and 2 September 1890. He spent the week of 1 January with Brandis taking dictation "on the ways to get things done in America." Pinchot Diaries, 1 January 1890.
12. JW Pinchot to GP, 19 August 1890; GP to JW and Mary Pinchot, 31 July 1890, Pinchot Papers; Pinchot Diaries, 1 August and 20 December 1890; and Pinchot, *Breaking New Ground*, 32-33.
13. Pinchot Diaries, 16 March 1890; GP to JW Pinchot, 19 March 1890, Pinchot Papers.
14. GP to JW Pinchot, 10 March 1889, Pinchot Papers.
15. GP to Mary Pinchot, 2 November and 16 March 1890, Pinchot Papers.
16. GP to JW Pinchot, 9 June 1890, Pinchot Papers.
17. GP to Mary Pinchot, 15 December 1889, Pinchot Papers.
18. GP to JW Pinchot, 13 April 1890, Bernhard Fernow to GP, 9 July 1891, and H. B. Ayres to GP, 11 May 1891, Pinchot Papers.
19. Pinchot Diaries, 15 May, 19 July, and 3 November 1890; and GP to JW Pinchot, 29 January and 31 August 1890, Pinchot Papers.
20. Pinchot, *Breaking New Ground*, 10-22; Pinchot Diaries, 8 April 1890, specifically discusses the many interests of the Forstmeister, and 30 April 1890, about Professor Landoldt planting a tree.
21. William B. Greeley, *Forests and Men* (Garden City, NY: Doubleday and Co., 1951), 82.
22. Pinchot Diaries, 1 May 1890.
23. Pinchot, *Breaking New Ground*, 10-22.
24. GP to JW Pinchot, 18 February 1890, Pinchot Papers.
25. GP to JW Pinchot, 31 August 1890, Pinchot Papers.
26. GP to Amos Pinchot, 8 December 1889, Pinchot Papers.
27. GP to Mary Pinchot, 12 February 1890, Pinchot Papers.
28. GP to JW Pinchot, 7 January 90, Pinchot Papers.
29. Pinchot Diaries, 12 April 1890.
30. Pinchot Diaries, 12 and 15 July 1890.
31. Pinchot, *Breaking New Ground*, 21, 30.
32. Pinkett, *Public Forester*, 20; Pinchot, *Breaking New Ground*, 34-35.
33. Pinchot Diaries, 14 March 1891; Pinchot, *Breaking New Ground*, 38-39. Fernow's only biographer, Rodgers, makes no mention of the trip.
34. Pinchot Diaries, 3 and 4 February 1891. Neither of Pinchot's biographers mention the circumstances surrounding these comments, that Pinchot was sick and miserable from a bout of diarrhea, possibly because it would detract from their almost hagiographic treatment of Pinchot. See: Pinkett, *Public Forester*, 22; and McGahey, *Forester-Politician*, 25.
35. Pinchot, *Breaking New Ground*, 38-39.
36. Char Miller explores Pinchot's complex mentor-student relationships with John Muir, Charles Sargent, and Fernow during the early years of his career in "Before the Divide," in *Gifford Pinchot: The Evolution of an American Conservationist*, 3-40.
37. Fernow to GP, 20 January 1892, Pinchot Papers.
38. Fernow to GP, 2 February 1892, Pinchot Papers.
39. Fernow to GP, 20 January 1892, Pinchot Papers.
40. Pinchot, *Breaking New Ground*, xv; Rodgers, *Fernow*, 170.
41. Laura Wood Roper, *FLO: A Biography of Frederick Law Olmsted* (Baltimore: Johns Hopkins University Press, 1973), 415-17, 433.
42. GP to JW Pinchot, 26 May 1892 and 27 March 1893, Pinchot Papers.
43. GP to Mary Eno Pinchot, 23 November 1890, Pinchot Papers.
44. GP to JW Pinchot, 27 March 1893, Pinchot Papers. Even after taking over the Division of Forestry, Pinchot held true to his belief that "the forests must be regulated by principles different from those" regarded as essential in Europe. See Brandis to GP, 7 October 1901, Pinchot Papers.
45. JW Pinchot to GP, 4 February 1891, 11 and 18 February 1892, 26 and 28 October 1892, Pinchot Papers.

46. Pinchot Diaries, 7 November 1892.
47. Carl Alwin Schenck, *The Birth of Forestry in America: Biltmore Forest School, 1898-1913* (St. Paul: Minnesota Historical Society, 1955; reprint, Felton, California: Forest History Society and the Appalachian Consortium, 1974), 77.
48. Schenck, *Birth of Forestry*, 44.
49. Schenck, *Birth of Forestry*, 118.
50. Schenck, *Birth of Forestry*, 118.
51. Schenck, *Birth of Forestry*, 117.
52. Schenck, *Birth of Forestry*, 132-133; GP to JW Pinchot, 26 May 1892, Pinchot Papers.
53. Schenck, *Birth of Forestry*, 132; Pinkett, *Public Forester*, 30.
54. Rodgers, *Fernow*, 47.
55. Pinchot, *Breaking New Ground*, 69-70; By March 1896, the plan had shifted to combining the resources of Columbia and the Botanical Garden to form one school. See N. L. Britton to Pinchot, 4 March and 21 May 1896, Pinchot Papers.
56. Char Miller, "Wooden Politics: Bernhard Fernow and the Quest for a National Forest Policy, 1876-1898." In *The Origins of the National Forests*, ed. Harold K. Steen (Durham, North Carolina: Forest History Society, 1992), 295; Rodgers, *Fernow*, 230-231.
57. Rodgers, *Fernow*, 174-175, says Fernow delivered the lectures in 1887, but the claim is convincingly refuted by Herbert Smith, who researched the matter for the Forest Service. See Herbert Smith to R. P. Holdsworth, 22 March 1933, Henry S. Graves Papers, II-43, 480, Manuscript Division, Sterling Memorial Library, Yale University, New Haven, CT. H.H. Goodell, President of Massachusetts Agricultural College, mentioned to Pinchot that he wanted to establish a chair of forestry at his school but lacked the funding, and asked Pinchot to deliver a series of lectures on forestry to the senior class in 1891. H.H. Goodell to GP, 19 March 1891, Pinchot Papers.
58. Rodgers, *Fernow*, 215-216.
59. Miller, "Wooden Politics," 297; Harold K. Steen, *The U.S. Forest Service: A History* (Seattle: University of Washington Press, 1976), 46.
60. Rodgers, *Fernow*, 307.
61. Pinchot, *Breaking New Ground*, 151; R. C. Bryant, "Silviculture at Axton and in the Adirondacks Generally," *Journal of Forestry* 15 (1917), 801-810; and Barbara McMartin, *The Great Forest of the Adirondacks* (Utica, NY: North Country Books, 1994), 208-210, 218-220. McMartin offers a summary of the work at Nehasane and Graves' work at nearby Whitney Park.
62. Ralph Hosmer, "The Progress of Education in Forestry in the United States," in *The Commonwealth Forestry Review*, Vol. 2, April 1923, 88.
63. Amos had agreed to the contribution two months before. GP to Amos Pinchot, 19 December 1899, Pinchot Papers; Unpublished memoirs, November 1948, Graves Papers, II-17, 210.
64. Unpublished notes entitled "Milford," no date, Graves Papers, II-18, 213.
65. JW Pinchot to GP, 29 October 1894; GP to Mary and JW Pinchot, 12 November 1894, Pinchot Papers.
66. Pinchot Diaries, 23 April 1896.
67. Unpublished memoir, and "Biographical Notes," Graves Papers, II-17, 210.
68. Pinchot, *Breaking New Ground*, 152.
69. "Biographical Notes of Henry S. Graves," Graves Papers, II-17, 210.
70. Rodgers, *Fernow*, 29; Miller, "Wooden Politics," 291-294.
71. Rodgers, *Fernow*, 218-219.
72. Graves to Hadley, 11 January 1902, Hadley Papers, I-38, 748.
73. Nelson C. Brown, "Milford—The Cradle of American Forestry," *Yale Forest School News*, Vol. 43, No. 1, 8.
74. McGeary, *Forester-Politician*, 48-49.
75. Graves to Hadley, 8 November 1904, Hadley papers, I-38, 748.
76. Henry S. Graves, *The First Half-Century of the Yale School of Forestry: In Commemoration of the Semicentennial Reunion at New Haven, Connecticut, 11-12 December 1950* (New Haven: Yale University Press, 1950), 9.
77. McGeary, *Forester-Politician*, 6.
78. *Troy Times*, 11 December 1899, mentions formation of this club at Cornell with membership available only to professional foresters.
79. Pinchot, *Breaking New Ground*, 150-151.
80. U.S. Forest Service, *Service Bulletin*, Vol. XXIV, No. 11, May 27, 1940, 1-3; Pinchot, *Breaking New Ground*, 151.
81. Pinchot Diaries, 8 and 18 June 1902.
82. Gifford Pinchot and Henry Graves taught at Yale, and William B. Greeley, Robert Y. Stuart, and Ferdinand A. Silcox graduated from the Yale School of Forestry.
83. Hosmer, "The Progress of Education," 88-89.