

The Yale School of Forestry and Environmental Science celebrates its Centennial in the year 2000. This article analyzes the establishment of the school, as a prelude to a book-length work on the subject to be published in conjunction with the commemoration of the School's Centenary.

PLANTING THE SEED

THE ORIGINS OF THE YALE FOREST SCHOOL

The story has familiar elements, or two versions that are not incompatible. In the first version, it was two young men, one thirty-five and the other twenty-nine, both energetic, idealistic, and confident Yale graduates, who were concerned about the dearth of men equipped to play a role in the

newly created Division of Forestry which they both served. Over cocoa in the Pinchots' Washington house, Gifford Pinchot and Henry Graves determined to start a graduate school—at their alma mater. But some credit Pinchot's father, a successful businessman, steeped in the Progressive ethos and committed to the embryonic conservation movement, who suggested to his son, a talented but rather unfocused young Yale graduate, that he might become a forester. From that moment, Gifford Pinchot embarked on what was to become a distinguished career in American forestry; among his innovations was the founding of the Yale Forest School. The simplicity of either account raises doubts.¹

Why a school of forestry in a city, and in an Eastern one at that, far from the national forests it was to serve? Why a school of applied science (if indeed forestry was a science) in a university devoted doggedly to the traditional liberal disciplines? Why a graduate school in a field as yet to have undergraduate programs in forestry? Above all why did it work? For the Yale School of Forestry and Environmental Science (the second half of the name was added in 1972) has the distinction of being

the longest surviving professional school of forestry. (Cornell's predated it but was killed in legislative wrangling in 1903.) As the School approaches its Centennial, it is appropriate that recognition be given to the various individuals who contributed to its creation and to the contemporary forces which provided a favorable climate for the new institution.

The fact that the stars were aligned to ensure the success of the new undertaking cannot be denied. Two dominant ideologies—the progressive impulse that flourished at the end of the nineteenth century and the rapidly growing conservation movement, provided the soil. Two powerful individuals, both completely sympathetic to progressivism and conservation, one the president of Yale and the other the wealthy supporter of good causes, supplied the fertilizer, a role not sufficiently recognized even by the son. This is not to disparage the vision of Gifford Pinchot nor the crucial role played by his able and equally ambitious lieutenant, Henry Graves, but to present a fuller picture and to locate the Yale School in the national context, for the School has always been a national one.

The compulsion to fix has been a constant in our history;

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GREY TOWERS NATIONAL HISTORIC LANDMARK, USDA FOREST SERVICE

The Pinchot family provided buildings, tents along “Broadway,” and land for practical forestry courses on their Milford, Pennsylvania estate.

the antebellum period sought societal amelioration (the word most frequently used was ‘evils’), but the so-called Progressive Era was even more ambitious. Not only could the ‘problems’ be identified, but the means for solution were at hand in the knowledge exploding from the new universities and at the hands of the experts who could apply that information. No longer would the leadership of change be vested in the layman, such as James Pinchot who had been a founder of the Pennsylvania Forestry Association. It is significant that the word amateur became one of derision during this period. The multifaceted reformer was to be replaced by the academic specialist whose findings were to be implemented by the dedicated, and highly trained public servant; by a Gifford Pinchot. It was Gifford who said that “the trained forester must know the forest as a doctor knows the human machine” and must be skilled at making “a scientific analysis in the service of resource exploitation...”²

It was this very matter of “resource exploitation” that stirred the emotions of many leading citizens. The declaration of the closing of the West in 1890 had more than symbolic importance—the proclamation served as a reminder that what had been perceived as a boundless and bountiful landscape was indeed finite and fragile. The heroes of the conservation movement are legend. George Perkins Marsh who, observing Italy’s barren mountains, warned of the consequences of trying to impose man’s will on nature. John Muir who tramped his beloved mountains and wrote eloquently about harmony and the beauty of the unspoiled. Charles S. Sargent, the Harvard botanist who introduced his trained scientific mind to the

discourse (and who chaired the first National Forestry Commission of which Gifford Pinchot was secretary). Carl Schurz who proclaimed, as Secretary of the Interior, and with good German rectitude, that the government had a moral obligation to save the land. And Franklin B. Hough, who undertook the first massive study of the forest reserves of the nation and lectured indefatigably on the need for federal action.³ In a typical reformist fashion, the conservation movement began as a crusade of the upper middle class who, with almost religious zeal, formed national voluntary organizations to save the woods. Adults banded together in forest associations; ladies led Garden Club discussions and in 1875 the American Forestry Association was organized. With naive optimism, the founders of Arbor Day hoped that having school children discuss the importance of our trees and subsequently plant seedlings (first in bare Nebraska) the forests could be saved.

James Pinchot was a committed conservationist, one of the founders and president of the Pennsylvania Forestry Association. He was also a successful and wealthy businessman, a patron of the arts, and a prominent philanthropist. His two sons and one daughter were active in reform causes throughout their adult lives. Amos, for example was a founder of the American Civil Liberties Union, and Gifford’s role in the Bull Moose Party is well known. The latter always credited his father as being the Father of Forestry In America, and, although others certainly deserve to share the title, it was James Pinchot, who asked Gifford the pivotal question and who, more significantly, willingly underwrote his son’s new venture.⁴ His financial contribution to the School was crucial, but equally important

was his enthusiastic provision of a site for the field work deemed so essential. For twenty years Milford was home to the famous “camps” where young men learned the rudiments of forestry and bonded as crusaders in the new mission. In 1903, when Forest Hall was dedicated, it was James who presided; Gifford was in Europe.

No one can deny the importance of the Pinchot family in the founding of the Yale School; in the early decades the Pinchot money was as essential as Gifford’s visibility and national status. But had the leadership of Yale not been receptive to the very idea, the School perhaps would have had to go elsewhere (in fact, Gifford Pinchot had actually approached Columbia before Yale) or might not have thrived. Arthur Twining Hadley has never received the credit due him. Hadley, selected in 1899, was Yale’s first lay president, a brilliant alumnus (valedictorian of his class in 1876) and a beloved if idiosyncratic teacher. His graduate work in Germany had been in a modern, even applied field—economic history and statistics. He had served as the first Dean of the new Graduate School. He had led an active life outside the ivy walls, as a journalist and as Connecticut’s Labor Commissioner. He was an authority on transportation. Here was a man at home in the world of the railroad magnates and one clearly sympathetic with the emerging vision of the new university. The president welcomed the suggestion from the President (Roosevelt) that government officials be invited to lecture at Yale “upon the general topic of university training for government service and upon the opportunities for valuable service under the government.”⁵

Hadley’s commitment to environmental matters was real; he served as vice-president of the Connecticut Forestry Association, he supported proposals for the White Mountain Forest Reserve, he addressed the American Forestry Association in 1907 and the conference on forest education in 1909. More important was his desire to broaden the Yale curriculum. One idea had been to create a School of Irrigation, somewhat akin to the new Forest School, so that Yale would “become the training school for the Government’s vast irrigation work.”⁶ In this case, however, there was no prospect of an endowment, no Pinchot family in irrigation.

In history nothing happens by chance; nor is everything ever pre-determined. Ideologies, movements, the presence of key individuals, the availability of the means, all have to be present and to combine. So it was with the birth of the Yale Forest School. A favorable national climate, a sense of urgency, committed and powerful actors, a very few indeed—for at the turn of the century the world was simpler, less bureaucratic, probably, too, less democratic, both in the public and the private sphere. Arthur Hadley saw an ideal opportunity to nudge Yale in ways consistent with his vision of the University. James Pinchot was willing to fund his son’s dream at his son’s alma mater to further one of his pet causes. And Gifford was ready to swing into high gear. Within a few months, from December, 1899 to June, 1900, courses and degree requirements were sketched out (no committees here), sites identified (Marsh Hall at Yale, with a little fudging of a bequest, and the Pinchot estate in Milford, Pennsylvania), initial funding assured, and leadership volunteered. Henry Graves is reputed to have said to Gifford “If you and your family will give an endowment for a Forest School at Yale, I will go up and run it.”⁷ Admirable confidence indeed for a twenty-nine year old!



NATIONAL ARCHIVES COLLECTION, FIG 90-G

Henry S. Graves checks the growth rate of a conifer just cut down at the Yale Forest School Summer Session on the Pinchot estate, 1904. Graves was the first head of the school, and later followed in Gifford Pinchot’s footsteps as chief of the U.S. Forest Service.

His confidence was, however, justified. On September 27, 1900, the venerable William Henry Brewer, whose credentials as a professor and a conservationist were impeccable, welcomed the seven members of the first class at the Yale Forest School: “Gentlemen—The opening of a new Department in an old University is a notable occasion.”⁸ Notable certainly, but also daunting. The most pressing problem was who was to teach those young men? Recall that in 1900 there were no professors of forestry as such in the country. Gifford Pinchot held the title of Professor of Forestry (non-resident), but the entire faculty of the department consisted of two men: Henry Solon Graves and James W. Toumey, two totally different men, yet each uniquely suited to the role he was to play for the next thirty years.

Henry Graves was cut from the same mold as his mentor Pinchot. They were both insiders, Yale men, comfortable financially and personally, imbued with the service ethic, confident of their abilities, and doers. Graves had been a member of the class of 1892, one of the three deacons of his class, on the football team, and in his senior year tapped for Skull and Bones. Like many young graduates, he taught for a year, but, convinced that his “interests lay in handling men and getting things done



James W. Toumey, Gifford Pinchot, and Henry S. Graves pose in front of Sage Hall, home to the School of Forestry at Yale, 1926.

rather than in basic scholarly work,” and with an interest in forestry, perhaps inspired by his older friend, he laid the foundation for a career in forestry. He spent a fall at Biltmore with Pinchot, studied botany and other basic sciences at Harvard, went for a year to Germany where he followed Dietrich Brandis about, and then returned to work with Pinchot as a consulting forester in New York. When the latter became Chief of the Division of Forestry for the federal government, he selected Graves as his right-hand man. They lived and worked together, a collaboration that lasted for decades. Pinchot later generously claimed that Graves was “the best man in sight” to head

the new school because of his “capacity for detail” and the fact that he was a “keen and reliable observer, full of mental and physical energy and initiative, and far better trained” than himself. The qualities Pinchot detected were to prove precisely those needed by the new venture, and Graves was to play a monumental role at the School, the Forest Service, and in the development of national forestry, as Chief.

Henry Graves was not a trained scientist, even by the standards of the time, but more a policy man with an eye for detail and a canny political sense. James Toumey was his foil, very much the man behind the man, and a true man of science. Toumey was a Midwesterner, a graduate of a land-grant institution, Michigan State College in the same year Pinchot took his degree from Yale. His field was botany, and he had taught at Michigan and the University of Arizona. He had also served as a botanist at the Arizona Agricultural Experiment Station until appointed to be in charge of research in tree planting in the Division of Forestry. He was a man of the outdoors, “tanned by the sun of Arizona,” with a warm personality which “endeared him to all.” He was experienced in organizations, a former faculty man, and a field staff member of the Service, with a wide network of colleagues in the public sphere. Here then was the necessary balance. Toumey was a dendrologist and one of the innovators in silviculture, a researcher who pushed the frontiers of his field in order to apply new knowledge to actual fields and forests. When he came to Yale he brought with him his own herbarium of twenty-five hundred species, thus establishing the core of the School’s future collections, and during his tenure, he led his colleagues in writing texts for instruction in forestry.

Between them, Graves and Toumey were expected to teach an ambitious curriculum. Toumey taught Forest Botany and



The Class of 1904 included future professors Herman H. Chapman and “Pop” Hawley, as well as W. B. Greeley, a future chief of the U.S. Forest Service. (For a complete listing of the individuals pictured here, contact Carol Severance at the Forest History Society.)



Professors Herman H. Chapman and Ralph C. Bryant enjoy a break from the rigors of forest camp instruction.

Introduction to Forestry and Forest Planting (for which he certainly was qualified). Graves covered Silviculture and Forest Measurements (his expertise was questionable in the latter). Students studied Forest Physiology and Meteorology with Brewer (both courses he had taught previously); and elementary surveying from DuBois of the Sheffield School. Other Sheffield courses, especially in the basic sciences were available, but still, the forestry instructors were stretched. “We were forced to adopt the device of giving a portion of the instruction in short courses by special lecturers.” In the third year, some nine individuals offered instruction, including von Schrenk, who taught Diseases of Trees, and S. S. Barney who, for \$100 gave lectures on Roads and Trails. Edward A. Bowers actually taught Forest Law for twenty years, although never a permanent member of the faculty. While many of these instructors were eminent in their fields and many lectures excellent, still “it was not good education.” However, within six years after the first class was offered, the faculty had more than tripled, and that core of six, all men of stature in their emerging areas, and all of whom remained for decades, gave the School stability. Each, too, helped to define areas of specialization within the new profession.

The legendary Chappie, Herman Haupt Chapman, a member of the class of 1904 had come to the School with considerable prior experience. He was a graduate of the University of Minnesota, with a degree in economics and a second one, three years later, in Agriculture. His position as a Supervisor in the Northeast Experiment Farm in his home state gave him firsthand experience with the devastation of forest land; he became a self-taught forester, seeking out the greats—Pinchot in Washington D.C., Fernow at Cornell, and Schenck at Biltmore. He studied for a year at Yale in 1901, but returned to the Minnesota woods, finally taking his degree in 1904—probably the first true graduate student. He returned to teach two years later; remaining for thirty-seven years.

Chappie was never a dean of the School, and yet he was probably the most visible and vocal member of the original faculty. He was an outstanding teacher, the perennial leader of the Southern field trips (he always claimed that 45% of a student’s time should be in the field), and the author of texts. His research interests defined him as an early academic ecologist. Throughout his career he thought holistically about trees. In addition, he was

active in national forestry, as president of the Society of American Foresters and as chair of the committee that led to the accreditation of forest schools. Twice, he took sabbaticals to return to national forest service. Above all, he was a most loyal alumnus; over the decades he served as the link between the School and the growing body of graduates.¹⁰ More than any other individual, Chappie promoted that sense of camaraderie which is an essential ingredient in the identity of any group; he became the Yale School of Forestry.

Of the new members of the faculty, Ralph Clement Bryant was probably the most qualified. He brought with him a level of professional expertise; he also introduced the theme of utilization into the curriculum—a view that would later inspire controversy. For three generations his family had been interested in trees, and, while an undergraduate in Illinois, Ralph had studied dendrology. He then enrolled in the newly founded school at Cornell and was the only graduate in the first class, in 1900. He worked for a year in New York State before going to the newly acquired Philippines, where he became head of the Division of Forest Management in the Forest Service there. Pinchot subsequently recruited him as a lumber inspector for the stateside service. When sufficient money was raised by the National Lumber Manufacturers’ Association, Graves appointed Bryant to the first endowed chair at the School, that of Lumbering.¹¹

Bryant, like his colleagues, was forced to write textbooks, and it was he who forged the strongest links with the lumber industry. For many years he was closely associated with the Crossett Lumber Company, the eventual host of the spring field trips. His final concrete contribution came in 1938 when he was chairman of the Timber Salvage Committee in Connecticut after the disastrous hurricane. If each of the faculty can be seen as making a unique, and vital contribution to the complexity and contradictions of the new School, Ralph Bryant represents a continuing strand with ties to the world of private lumbering. There are still graduates who feel that their alma mater betrayed its roots by “getting into all that environmental stuff.”

Unlike the other two members of the 1905 triumvirate, one the scientist, the other the technical lumberman, Ralph Chipman Hawley was perhaps precisely the kind of man Pinchot had envisioned as the captain in the new army of foresters. He was a liberal arts man, a graduate of Amherst College, and was motivated to become a forester, as had been Pinchot and Graves, by his love of the out-of-doors and the contrasting confinement of an office job. After his graduation from the Yale Forest School, he joined the Forest Service for a year and then became assistant State Forester in Massachusetts, thereby confirming Graves’ goal of providing men for both federal and state service.

Throughout his long career at Yale, Hawley straddled the boundary between the woods and the classroom, between practice and theory, emphasizing learning by doing, as he had learned. “Pop” Hawley, with his floppy hat, became a fixture at the Milford summer camps for the neophytes, and on the Southern sessions where he initiated the senior class into the rigors of serious field work. He taught mensuration and surveying, required massive field reports and plans, all the while reveling in the games and sense of masculine camaraderie which

stayed with his “boys” for life. That sense is certainly not exclusively male today, but the School’s collective identity is stronger even today than that of any other graduate school at Yale.

Henry Graves surveyed his accomplishments by 1906 and found them good. “The Forest School now shows for the first time in its history an organization which may be considered beyond the formative stage.”¹² Perhaps true, but only barely; temporary appointments remained a necessity. The appointment of Samuel J. Record, in 1910, did, however, round out the faculty and confirmed Graves’ assessment.

Record’s career prior to coming to Yale illustrates both the porous nature of the emerging profession and the informality of the contemporary hiring practices. When Pinchot or Graves saw a good man, one or the other hired him. Samuel Record was a graduate of Wabash College, with strengths in botany. He had come to the School with advanced standing because of his strong background, as a member of the class of 1903, but he did not complete his degree. Instead he passed the Civil Service examination and became a Forest Assistant. While in the Service he was assigned to the Midwest and was able to complete his Masters degree at Wabash, where he taught for a year while simultaneously meeting his Service responsibilities. He rose rapidly, becoming Supervisor of the Arkansas Forest where he learned first hand, and by trial and error, the skills of forest management. His knowledge of the forest led to his appointment at Yale when Graves left for Washington D.C. and Toumey became the Director of the School.

Record was a multi-talented man, apparently willing to turn his hand to whatever task presented itself. Almost immediately after his arrival his signature (and his very tidy script), as secretary, appeared on the minutes of the faculty. He taught dendrology annually at the summer camp. He studied at the Forest Products Laboratory in order to develop expertise in that field, and after the establishment of the new Department of Tropical Forestry, he took on that challenge; becoming a recognized international expert on tropical woods. He became Dean in 1939. Record’s energy, steadiness, administrative abilities, and scientific commitment were crucial as the School came of age.

Thus, within a decade, there was indeed a School with a strong faculty. Each member was actually a department. Each developing specialty—silviculture, management, conservation, lumbering—became fixtures in the evolving profession. That there were incipient tensions cannot be denied, and the history

of the Yale School of Forestry over the century became the story of the resolution of, or accommodation to, those tensions as well as the tale of the evolution of the progressive dream of the founders. □

NOTES

1. Gifford Pinchot, *Breaking New Ground*. (Island Press: Washington, D.C., 1974, 1947), p.152; the account is repeated in *The First Thirty Years of the Yale School of Forestry*, pp.1–3, and in *The First Half-Century of the Yale School of Forestry*, pp.3–6.
2. Char Miller, “Old Growth: A Reconstruction of Gifford Pinchot’s Training of a Forester 1914–1937” pp.9–10, in *Forest & Conservation History*, v.38, #1, 1994. Pinchot’s use of the term exploitation foreshadows future debates within the field.
3. See Cox, Thomas R., et al., *This Well-Wooded Land* (Lincoln: The University of Nebraska Press, 1985), esp. pp.142ff. Both Schurz and Hough were transitional figures, heavily involved in antebellum reform; Hough first employed statistics in promoting the role of the federal government in education.
4. Gifford Pinchot, *Breaking New Ground* (New York: Harcourt, Brace, and Co., 1947), pp.1–3.
5. Letter from TR, September 23, 1903, YRG 2-A-13, I, Box 69, file 1383.
6. Letters, June 14, 1902, file 1382.
7. YRG 249, II, Box 14, file 178, personal recollections of HSG delivered to the Dissenters, February 12, 1943.
8. YRG 100, William Henry Brewer papers, Box 43, file 254. Brewer was the Norton Professor of Agriculture, funded in 1864 by Morrill Act money, a member of the National Academy of Sciences, and a member of the Forest Commission of 1895–97, where he first dealt with Pinchot. He promised to teach an undergraduate course in forestry and donated his collection of woods to the School. The term Department was employed until the University reorganization after World War I.
9. *The First Thirty Years*, pp.7–8 for a list of over 50 instructors.
10. See “Dear Professor Chapman,” *Journal of Forest History*, v.25, #4, October, 1981, pp.197–208 for a selection of letters.
11. *The First Thirty Years*, pp.36–38. The coincidence of the acquisition of the Islands two years before the founding of the School, the demand for the tropical lumber so plentiful there, and the Progressive Republican administration of the territory led to a close association between them and the School.
12. YRG 24-F, *Governing Board Minutes*, May, 1906.