

*This article takes an original look back at the beginnings of the first four-year forestry educational program in the United States established 100 years ago.*

# ROOTS OF AMERICAN FORESTRY EDUCATION

*TRIALS AND TRIBULATIONS  
AT CORNELL UNIVERSITY*

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**F**or the past century, the Nation's institutions of higher education, particularly its Land Grant Universities, have been responsible for producing the cadre of forestry specialists necessary in today's complex society. Forestry programs, whether they be in colleges, schools, or departments, or granting two-year,

four-year, or graduate degrees, have evolved by adjusting their curricula to match the demands facing practicing professionals. This has meant modifying courses to include new technologies, such as the use of GIS and GPSS; adding new courses such as law and ethics; and dropping courses addressing skills no longer needed—like mule packing and outdoor cooking! Given today's forestry infrastructure and society's need for comprehensively educated forest resource managers, it is hard to imagine a time when it was impossible to gain a comprehensive forestry education in the United States—but, this

was exactly the situation until just before the turn of the nineteenth century!

The close of the 19th century was a watershed for the future of professional forestry in the United States. Until then the study of forestry subjects was largely confined to a few courses in agriculture, botany, or biology departments; complete curricula were only available to those willing and able to study in countries like Germany and France. In 1898, curricula became available for those desiring a forestry technical degree at the Biltmore School in North Carolina. In 1900,

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**BY JAMES LASSOIE, RAYMOND OGLESBY,  
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the Yale School of Forestry began offering graduate degrees in forestry. Yale is now the longest continuously operating program. But, the New York State College of Forestry in Ithaca, New York, which was established on April 14, 1898 by Cornell University's Board of Trustees, became the first school to offer a four-year bachelor's degree in forestry. A proliferation of forestry colleges throughout the country followed, and while the Society of American Foresters presently accredits 38 four-year forestry programs in the United States, Cornell is not among them!

## PROFESSIONAL FORESTRY BEGINS AT CORNELL

From the recollections of the college's first and only dean, Dr. Bernhard Eduard Fernow, a few years after 1903 we are blessed with a little known view of how the College of Forestry at Cornell came to be and not to be. The story begins with a Colonel Fox, Superintendent of New York's state-owned forests during the mid-1890s. He believed that the State's constitutional amendment setting aside the Adirondack and Catskill preserves as lands to be kept forever wild was unfortunate. The Colonel claimed that approval by the State's electorate resulted from a widespread ignorance of enlightened forest management and its implications. In his annual reports for 1896 and 1897 Fox advocated inauguration of a demonstration forest to educate the body politic regarding what modern forestry was all about. He shared this idea with an Adirondack real estate dealer who rejected it but, later, sensing the possibility of a profitable deal, returned to ask what kind of land tract would be needed. The realtor then saw Governor Black and warmed up his interest in such a demonstration forest.

Subsequently, Governor Black went on an Adirondack fishing trip with a Colonel Francis and discussed with him Fox's proposition and his fear that politics would prevent carrying out such a scheme. Francis, then a trustee of Cornell Uni-



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*Bernhard Fernow, first and only dean of the College of Forestry at Cornell.*

versity, suggested that this hurdle might be leaped by having Cornell conduct such an experiment. Cornell's President Schurman was consulted and, according to Fernow later, he suggested that a college of forestry be instituted by the University to carry on the demonstration. Schurman then consulted three of the Nation's leading foresters, Gifford Pinchot, Dr. Alwin Schenck, and Dr. Fernow to elaborate a scheme for such a college.

With the Governor attending to the legal and Fernow to the technical details, bills were drawn up for the undertaking, submitted to the Legislature and passed without difficulty. Has there ever been, before or afterwards, anywhere another college whose origin can be found simply in the desire of a few politicians to have an experiment carried out?

Once the new college, the first of its kind in North America, was formed, Dr. Fernow was asked to become its first Dean and Director and to organize the college and develop the demonstration forest. Resigning his position as Director of the U.S. Department of Agriculture's Forestry Division (predecessor of the U.S. Forest Service), Fernow quickly moved to acquire a tract of land for the demonstration forest and to establish a program of instruction. The former involved purchasing 30,000 acres of forested Adirondack land near Axton, NY in Franklin County. To prepare for and begin the desired demonstration as well as to carry out the College's academic program, additional staff were needed. Two new

*Students of the first forestry classes at Cornell, 1900. Standing: T. F. Borst, Wilhelm Klemme, W. W. Clark, A. S. Williams, Howard M. Longyear, Ralph Zon; Middle Row: Walter Mulford, Harry J. Tompkins, Prof. John C. Gifford, Dr. Bernhard E. Fernow, Prof. Filibert Roth, Ralph C. Bryant, Clifford Pettis; Bottom Row: I. T. Worthley, Rushton H. Charlton, Frederick W. Fassett.*



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assistant professors were quickly hired, Mr. Filbert Roth and Dr. John Clayton Gifford. A four-year curriculum leading to the bachelor's degree and with an optional fifth year for a professional Masters in Forestry became operational in academic year 1898–99. Since many of the entering students had already completed part or all of their bachelor's degree program prior to enrolling in the College of Forestry, graduates were produced in short order; it was immediately apparent that demand for Cornell-trained foresters far outstripped supply. This seems to have been true throughout the five years for which the College existed. In all respects, this fledgling institution seems to have gotten off to an outstanding start as an educational endeavor.

In addition to the graduates of the College of Forestry, Fernow and Cornell made contributions to the profession through numerous publications. A significant one was his *Economics of Forestry* that included a curriculum for professional training that has since been broadly applied. Also, the College initiated a new scientific forestry journal, the *Forestry Quarterly*, that merged with the *Proceedings of the Society of American Foresters* in 1917 to form the *Journal of Forestry*.

### UNDERMINING OF THE DEMONSTRATION FOREST

While the College of Forestry seemed to flourish, the demonstration forest at Axton did not. From the beginning, the concept of demonstrating scientific forestry in the Adirondacks had been vigorously opposed by a group of influential landowners at nearby Saranac Lake, referred to by Fernow as the “bankers.” They undoubtedly looked upon this as a threat to their own interests. Working through the Forest Preserve Board, the State Senate, and at least one governor, they mounted a steady barrage of attacks on the demonstration and on Fernow personally. One example recounted later by Fernow provides a graphic illustration of this harassment campaign. He once had been charged on the floor of the Senate for using oleomargarine in his forestry camp contrary to state law and was saved from severe penalties only by a loophole in the law. The offending substance had been purchased in Pennsylvania, not in New York as legally prohibited.

The “bankers” were not the only ones causing difficulties for Fernow's demonstration forest. Cornell University appointed a Steering Committee, made up of Board of Trustee members, to oversee the College's activities relating to the demonstration site. In Fernow's acerbic description of its activities, the Committee “. . . seemed to be instituted mainly to curb the enthusiasm of the Director; to act as a break [sic.] so that matters should not proceed too smartly and that the Director should not direct too much. . . .” Unfortunately, this committee continued its ill-advised activities that seem to have been an unmitigated hindrance towards getting the project off to a good start.

Despite all the problems, Fernow and his staff did amazingly well in getting the whole Adirondack operation up and running. Students were intimately involved in all phases of the demonstration from an initial survey of the property

onwards. A market had been developed for all wood harvested and proceeds would reimburse the State Treasury for at least part of the costs of establishing the demonstration. However, delays, caused in large part by the Trustee Steering Committee's niggling, resulting in a course of action that ultimately proved fatal to not only the demonstration forest, but also the College.

### CLOSING OF THE COLLEGE

Fernow was well aware of the dangers posed by his “banker” neighbors. Harvesting of the existing forest, followed about a year later by replanting with conifer nursery stock, were the core activities of the demonstration. The original plan of development was carefully drawn up to spare Cornell's most influential neighbors direct views of harvesting and planting activities. Unfortunately, from the College's viewpoint, delay followed delay necessitating the first harvesting to take place on land adjoining the private summer camps of those wealthy New York bankers. These individuals, especially two of them who had used the Cornell-purchased tract for hunting, took umbrage at the operations and began proceedings to stop them. First, a newspaper war criticizing the methods of management was begun; then the Attorney General was interpolated to interfere, but without success; then a legislative committee of inspection was secured and without advising the College authorities or their Superintendent was taken around by the bankers, dined and wine and provided with a disapprobation report. Finally, Governor Odell was visited. The College's appropriation (\$10,000) for 1903 had passed through the Legislature without debate; but, after adjourning for the summer, the Governor simply pocketed the bill thus bringing the first college of forestry in North America to an ignominious end.

Dr. Fernow did not give up without a fight. He offered to “. . . continue the work without pay and to finance the College by charging tuition fees to all students, some seventy odd (students from New York having had free tuition). . . .” This proposition apparently originated with the students themselves. Despite a report by President Schurman to the trustees that was highly complimentary towards Dr. Fernow and that included the statement “. . . the University stands by its expert,” the College was abandoned. In a final comment on the University's action (perhaps “inaction” would be a more appropriate term) Fernow says: “A credible rumor has it that for thus gracefully submitting to the whip of the Governor the University secured the Agriculture building.”

Even after so long a time, it is difficult not to feel frustration at the political machinery that led to the College's demise. Fernow, his staff, and about seventy students who had entered the forestry curriculum in good faith deserved better treatment. Yet the game was not quite finished, not by a long ways. All told between the years of 1898 and 1904, when the College of Forestry closed, there were 114 students who received instruction in forestry at Cornell. These included 17 students who received Bachelor of Science in Forestry degrees, or changed in 1902 to the degree of “Forest Engineer” (FE).

## FROM COLLEGE TO DEPARTMENT

The demise of Cornell's College of Forestry posed obvious difficulties for the faculty, staff, and student body caught up in this unexpected, politically motivated development. A problem was also posed for Cornell's College of Agriculture (founded in 1888) since wood production was an integral part of the farming systems of that day. Wood-based enterprises also played an important role in the rural economy of the state's industries, farmers, and other private forest landowners. One Cornellian acutely aware of this was Liberty Hyde Bailey, Dean of the College of Agriculture. Even before the College of Forestry closed, he had stressed the importance of having forestry training at Cornell.

Of course, Dean Bailey's view of a proper institutional arrangement was to have a department of forestry in his College of Agriculture rather than a separate college of forestry. He was soon to have his way. In each annual report up until 1910, Dean Bailey emphasized the need for a program of instruction in forestry. Finally, in that year the Board of Trustees authorized establishment of a Department of Forestry and appropriated the sum of \$4,400 for its operation during the 1910–11 academic year. Professor Walter Mulford (Cornell BSA, 1899; FE, 1901) was appointed to be its first department head. Dean Bailey charted the expectations of this new department to include: (1) training of students for the practice of forestry as a profession, (2) non-professional training in farm forestry, and (3) conducting extension work in forestry. Undergraduate majors followed a rigorous science curriculum augmented by summer camps devoted to hands-on forestry practice and to applied engineering (offered by the Cornell's Civil Engineering Department). Non-professional courses were also taught to meet the needs of students in general agriculture.

A nucleus of five faculty members, including department head Mulford, soon had the department up and running. John Bentley, Jr. was hired in 1912 to develop teaching and extension programs in forestry. In the same year the College of Agriculture hired Samuel Newton Springs as professor silviculture where he remained until 1931 when he was appointed Dean of the New York State College of Forestry at Syracuse University. Arthur B. Rechnagel became a full professor in the department in 1913 and taught courses in forest management and utilization. Also in 1913, Frank B. Moody joined the department as the first New York State Extension Forester.

Continuing into the present, and especially after the mid-1930s, the department conducted a wide variety of programs directed at nonindustrial owners of the state's woodlands. An early basis of the emphasis in private forest management is the 1916 M.S. thesis of Cedric Hay Guise titled "Possibilities of Private Forest Management in New York State." Guise began as an instructor, later to become assistant professor and ultimately department chair. Beginning in 1924 and continuing until 1950, Joshua A. Cope, extension forester for the College of Agriculture, led the private forest landowner management effort. Programs were characterized by preparation and distribution of much written material, on-site visits, dem-

onstration projects, and talks presented to groups. Given the degraded condition characterizing much of New York's privately owned forests and the potential for new woodlands on abandoned agricultural land, programs on afforestation were emphasized during the earlier part of this period.

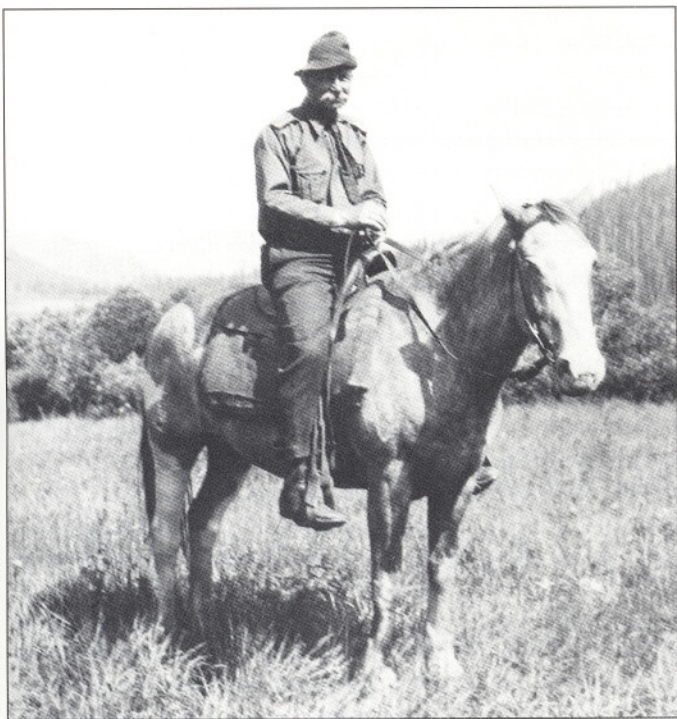
Acquisition of two major facilities, Fernow Hall and the Arnot Forest, provided a solid physical base for the department's teaching, research, and extension activities. The forestry building was erected following Dean Bailey's 1911 request to the State Legislature. The sum of \$100,000 was appropriated for construction. Events moved rapidly and the building was ready for occupancy in 1914, thus becoming the first building erected at any U.S. university specifically for the instruction of forestry. A two-day formal opening was held May 15–16, the first day being devoted to addresses by notables with Gifford Pinchot presenting the keynote speech entitled "The National Movement for Conservation." The second day brought an open meeting of the Society of American Foresters, the first to occur outside of Washington, D.C. Ironically, the Society's president that year was Dr. Fernow, who had moved on from Cornell to become the first head of the Faculty of Forestry at the University of Toronto. In 1922 Cornell's Board of Trustees finally recognized Dr. Fernow's eminence in his profession and his contributions to this university by naming the forestry building "Fernow Hall" in his honor.

From the department's inception, faculty had sought to obtain a large tract of forested land for hands-on training, demonstration, and research. As early as 1914 they had identified an ideal tract some 30 miles south of Ithaca, but funds could not be found for its purchase. The department had to make do until 1927 with small woodlots near campus for most of its "hands-on" training activities. Woodlots near campus for use in forestry education aggregated initially at 80 acres, which increased to 131 acres by 1942. Arranged in 1926 and transferred in 1927, the Arnot family of Elmira, NY



*Ralph S. Hosmer, Professor of Forestry and Head of the Department of Forestry at Cornell University, speaking at the renaming celebration of the Forestry Building on October 5, 1922. The flag covers the tablet over the building's main entrance bearing the name "Fernow Hall."*

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*Fernow later became the first Dean of the Forestry School at the University of Toronto.*

generously donated to Cornell a solid block of second-growth hardwood forest covering 1,639 acres. This was the same tract identified in 1914 as being "ideal." Other land has been added over the years so that now "the Arnot" extends over an area in excess of 4,000 acres.

### REORGANIZATION OF FORESTRY EDUCATION

In 1911 state legislation was enacted creating the NYS College of Forestry at Syracuse University, Syracuse, NY. Thus, two state-supported institutions were simultaneously engaged in the education of professional foresters at the Bachelors degree level. The year 1930 saw the NYS Board of Education's Board of Regents beginning to question the need for such duplication. A sense of déjà vu must have enveloped members of Cornell's Department of Forestry, especially its long-time faculty.

An investigation of academic forestry and wildlife conservation activities at the two campuses and recommendations of how best to deal with program duplication was undertaken by H. H. Horner, then Deputy Commissioner of Higher Education for New York State. His report was presented in the spring of 1932, modified after some negotiation with Cornell administrators and finally accepted by the Trustees; a formal announcement of the terms agreed on was made March 26, 1937. Briefly, the State College of Forestry was designated as the sole site for professional undergraduate training in forestry. Permanent faculty in Cornell's Department of Forestry were to be continued with responsibilities curtailed to courses in "farm" forestry, to extension work in forestry (an area that quickly grew in scope) and to research and graduate

### Wildlife and Conservation Management at Cornell

**R**oots in fishery and wildlife management at Cornell extend back to the College of Agriculture's earliest days. J. G. Needham was appointed Professor of Limnology in 1906; the year 1911 saw G. C. Embury appointed as an instructor in the college where he began his work in fish culture and fishery biology. His bulletin *The Farm Fish Pond*, published in 1915, was the earliest American treatise on this subject.

In 1917 the American Game Association selected Cornell, in cooperation with the U.S. Biological Survey, to initiate a program of professional training in game farming and management. The first instruction on this subject was given during the 1917-18 academic year by Arthur A. Allen, one of America's most renowned ornithologists, and has continued to the present; Professor Allen alone provided leadership in this area for 30 years. Thus, the half century following the founding of Cornell's College of Forestry witnessed establishment and growth of programs in fish and wildlife management.

The time was right for Cornell to merge its work in forestry with that in wildlife and fisheries. This it did in 1948 with creation of the Department of Conservation, which was renamed the Department of Natural Resources in 1970. Hence, 1998 represents a celebratory year for Cornell University marking the 100th year anniversary of the establishment of the Nation's first college of forestry as well as the golden anniversary of the Department of Natural Resources. Thus, the transition was complete, from a college dedicated to the scientific management of the Nation's forests, to a department within a college of agriculture that focuses on the country's renewable natural resources—its forests and fish and wildlife populations.

education. This agreement also defined new boundaries for the department by stipulating that it was to be responsible for the full development of instruction in wildlife conservation and management within Cornell's NYS College of Agriculture (see side bar).

So, Cornell once again "lost" its role in educating future foresters, but not without first contributing greatly to the development of this profession. By 1937 there had been 351 bachelor's degrees awarded, 86 masters, three Ph.D.s, and eight other degrees given to forestry students by Cornell for special reasons for a total of 448. The contributions that these individuals made to the sound use and management of the Nation's forests, though difficult to quantify, were certainly substantial. Dean Fernow would have found some solace in these contributions that lived on past the brief presence of Cornell's College of Forestry. □