FORESTRY AT CORNELL

by

RALPH SHELDON HOSMER
Professor of Forestry Emeritus
Cornell University
Head of the Department of Forestry
1914 to 1942

A Retrospect of Proposals, Developments, and Accomplishments in the Teaching of Professional Forestry at Cornell University

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PREFACE

This monograph is the outcome of a request made by my immediate colleagues at the time of my retirement that I prepare a summary of the more important happenings of the Department of Forestry at Cornell University for the twenty-eight-year period during which I served as its Head.

In 1943, I wrote such a manuscript broadened in scope to include an account of the [old] New York State College of Forestry, at Cornell University, from 1898 to 1903. Because of World War II, its publication was indefinitely postponed. Now in 1950 — in the semi-centennial year of professional forestry in the United States — it has becomes possible, through the courtesy of Professor Gustav A. Swanson, Head of the Department of Conservation at Cornell and through the New York State College of Agriculture, to publish such material. It seemed appropriate that such a summary be written by one who can speak at first hand of the incidents chronicled in its pages.

The primary purpose of this publication is to record permanently a brief history of the two periods at Cornell University when the major aim in the teaching of forestry was to prepare men to practice forestry as a profession; namely (1) the "old College of Forestry," from 1898 to 1903, of which Dr. Bernhard Eduard Fernow was Director and Dean of the Faculty, and (2) the Department of Forestry of the New York State College of Agriculture at Cornell University, from 1910 to June 1937. The non-professional courses, especially those in farm forestry, have been continued and developed since 1937. Also, the comprehensive Extension program in forestry, consistently developed from the early days of the Department, has been continued and further expanded.

This publication tells (1) why and how each school came to be established; (2) mentions some significant contributions made by each to the advancement of Forestry in the United States; and (3) gives the reasons that lay behind the discontinuation of the College in 1903, and later, in the 1930's, to the change in University policy which in June 1937 forced the Department of Forestry to cease to offer any instruction in professional forestry.

To round out the presentation of Forestry at Cornell, the account includes notes and comments on activities other than teaching which were characteristic of the College, and in turn of the Department of Forestry. These include a statement relative to the College Forest at Axton, New York, the so-called "Adirondack Experiment" of the "old" College; brief summaries of the research and of the Extension work under the Department; notes on the student body and on the parts played by the alumni in positions under the Federal and State Governments and in various and diverse branches of industry; and, from another angle, mention of certain of the more important contributions made, outside and beyond their regular academic duties, by the several members of the faculties of both schools in the promotion of Forestry in State and Nation, especially as officers or committee members of the Society of American Foresters.

Ralph S. Hosmer  
Professor of Forestry Emeritus  
Cornell University

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The New York State College of Forestry
at Cornell University
1898 to 1903

CHAPTER 1
A NEW DEPARTURE

From its inception Cornell University has been characterized by its willingness to break new trails and to undertake hitherto untried experiments. For this reason Cornell has to its credit many “firsts.” Of this, examples are found in each of the several colleges that make up the University.

Among such new departures was the establishment, in 1898, of the first school of collegiate rank on the Continent of North America to give technical instruction in forestry and to train men for the practice of forestry as a profession. It is true that the idea of this college did not originate at Cornell. It had its start, rather, as a suggestion from one of the administrative departments of the State at Albany. But when, in the form of a request from the Governor, the proposal came to the University, Cornell accepted the responsibility and so became the sponsor of this new enterprise.

There was good reason why such a college should be set up in New York. From colonial days the forest industries had occupied a leading place in the business of the State. In the decade from 1850 to 1860 the output of New York’s sawmills led the country in lumber production. Later, as the pulp and paper industry developed, New York was again a pioneer and for years the leading State both in the production of pulpwood and in the consumption of wood pulp.

From two other angles the people of New York State were concerned with their forests. Several of the important rivers of the State have their sources in the Adirondacks. The desirability of protecting the forest cover on these watersheds was well understood. Further, from the early seventies increasing interest had been developing in this State in the recreational value of forests, including under this head their use for hunting and fishing.

All these interests had found tangible expression in the creation of the State Forest Preserves in the Adirondacks and in the Catskills by the enactment of the basic forest law of the State in 1885. That act also set up a Forest Commission which without break has served the people ever since — today as the New York State Conservation Department.

The original forest law of 1885, which incidentally Dr. Fernow had helped to draft, contemplated technical forest management of the state’s forest properties. But owing in part to the fact that no professionally trained foresters were then available, as well as to other reasons, the Forest Commission merely sold stumpage to the lumbermen. This led to criticism by the public, both of the officials who administered it and of the law itself. One result was the insertion in 1894 of Section 7 into Article VII in the State Constitution; more particularly the words which prohibit any economic use of the Forest Preserve.

In that in the first bulletin of the College of
Forestry, dated September 1898, Dr. Fernow says that the movement for the establishment of the College of Forestry at Cornell was indirectly a reaction from “VII-7,” a note as to that section may be in place here.

Article VII—Section 7 was written into our fundamental state law on January 1, 1895, following the Constitutional Convention of 1894. The sentences wherein lie its power and its sting read as follows:

“The lands of the state now owned or hereafter acquired constituting the Forest Preserve as now fixed by law, shall be forever kept as wild forest lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed, or destroyed.”

Almost without exception professional foresters resident in New York State believe the inclusion—certainly the continuance—of so drastic a provision in the State Constitution to be unwise and unnecessary. But they have been able to do little about it. At various times proposals to repeal Section 7 have been before the people, on referendum. But in each case the provision prohibiting all cutting has been upheld. To this hour it has remained the most highly controversial topic concerning forestry in New York State. As such it continues constantly to crop up on all occasions. Since the last revision of the Constitution in 1938, VII-7 has become Article XIV, Section 1. The wording of the sentences in question remains as quoted.

There have, however, always been those in New York State who have understood, correctly, that forestry means not the locking up, but rather the wise use, of one of the four great natural resources—forests. Since the mid-nineties there have been some who wanted to see real forestry demonstrated on the state lands. One such man was Colonel William F. Fox, Superintendent of State Forests from 1891 to 1909. A suggestion to this end made by him led to a definite recommendation by the Fisheries, Game and Forest Commission in its report for 1896 (pages 132 and 133). This gained the approval of Governor Frank S. Black. In his message to the Legislature in 1898, Governor Black urged that a tract of land be bought and turned over either to the State Board of Regents, or to Cornell University, for the purpose of conducting a school of forestry and for making experiments in scientific forestry.

The Legislature accepted the idea and enacted Chapter 122 of the Laws of 1898. That statute created the New York State College of Forestry at Cornell University; provided for the purchase of a demonstration forest in the Adirondacks, which should be turned over to Cornell for thirty years; and authorized the University to take such action as might be necessary to carry out this combined project.

The Board of Trustees of Cornell University formally accepted the responsibilities so laid upon it, and at a meeting held on April 14, 1898, established the New York State College of Forestry and appointed Dr. B. E. Fernow as the Director and Dean of the Faculty. At that time Dr. Fernow was Chief of the Division of Forestry of the United States Department of Agriculture in Washington, a position he had held since 1886. He entered upon his duties at Cornell in the summer of 1898.

Information concerning Dr. Fernow, his life and his writings, may be found in the Journal of Forestry for April 1923 (Vol. 21, No. 4). This carries the tributes paid to him when the Forestry Building at Cornell was named Fernow Hall on October 5, 1922, and following his death on February 6, 1923, in Toronto, Ontario, Canada. Also, on pages 338 to 348, in the same volume is an exhaustive list of his writings, compiled by Raphael Zon (F.E., Cornell, 1901) who for many years was Dr. Fernow’s trusted lieutenant as Assistant Editor, first of the Forestry Quarterly, later of the Journal of Forestry. In his voluminous writings, Dr. Fernow touched upon practically all aspects of Forestry.

An appreciative estimate of Dr. Fernow’s work as Head of the Division of Forestry in Washington is that of Jenkins Cameron in his The Development of Governmental Forest Control in the United States (The Johns Hopkins Press, Baltimore, Maryland, 1928, pages 210 to 212). Men-
tion may also be made of the fact that in two of his books Dr. Andrew D. Rodgers III of Columbus, Ohio, treats of Dr. Fernow; incidentally in his biography of Dr. Liberty Hyde Bailey (Princeton University Press, 1948), and in detail in a forthcoming work, Bernhard Eduard Fernow, a Story of North American Forestry, announced by the same publisher for release late in 1950 or early in 1951.

THE WORK OF THE COLLEGE

A discussion of the work in Ithaca of the New York State College of Forestry at Cornell University may appropriately begin with a statement, based mainly on the official records, that can so be made available for ready reference — first as to the curriculum and then as to the faculty of the College.

CURRICULUM

Dr. Fernow was peculiarly well equipped to organize an adequate curriculum for the teaching of professional forestry. A graduate of an important German school of forestry, Munden, he was intimately familiar with the professional literature of forestry; and through personal acquaintance and correspondence with leaders in European forestry, he kept in close touch with current developments abroad.

Further, Dr. Fernow had as a young man come under the influence of the strict standards which had been inaugurated half a century before by the two great leaders in German Forestry, Georg Hartig and Heinrich Cotta. Actuated by their example he set up similar professional standards and traditions in America.

During his twelve years in Washington as Chief of the Federal Division of Forestry, Dr. Fernow had carried on a comprehensive campaign to educate the general public regarding forestry. As a part of this he had several times, at different colleges, given a series of lectures which embodied the essential features to be included in a curriculum for those desiring training for the practice of forestry as a profession. Such a statement, entitled System of Forestry Knowledge may be found in Dr. Fernow's Economics of Forestry, pages 103 to 105, — a book which has become a "classic" in American forestry literature. It was published in 1902 (T. Y. Crowell Company, New York) while Dr. Fernow was at Cornell.

As Professor H. H. Chapman says in his Professional Forestry Schools Report, Society of American Foresters (Washington, D.C., 1935, page 32), "The curriculum inaugurated by him long served as a guide to other American schools of forestry." Because of this, the "system" devised by Dr. Fernow has an interest in the history of forestry in America that transcends any one university. It was in no small part on account of his preeminence as a leader in forestry education that in his later years Dr. Fernow came to be called the Father of American Forestry.

FACULTY

To build up a faculty for the College, Dr. Fernow in the autumn of 1898 obtained the appointment of Filibert Roth as assistant professor. Mr. Roth had been a member of the Division of Forestry in Washington. There he had charge of the investigations in "timber physics," from which resulted some of the more important bulletins of the "old series" of the Division of Forestry, United States Department of Agriculture.

In Ithaca, Professor Roth gave courses in forest mensuration, exploitation [logging], surveying, and wood technology. For a time, also, he was in charge of the field work at Axton in the Adirondacks. Professor Roth resigned at the end of the college year 1900-01 to return to Washington. For the next two years he served there as Chief of the Division of Forestry in the General Land Office of the Department of the Interior. He brought out the first Manual of Instructions for the Federal Forest Reserves. In 1903, Professor Roth became the Head of the Department of Forestry of the University of Michigan. There he served for more than twenty years.

An appreciative tribute to Filibert Roth, "Man, teacher, and leader," may be found in the Journal of Forestry for January 1926 (Vol. XXIV, No. 1, pages 12 to 18), together with a formal
obituary notice (page 2) and an excellent portrait. Professor Roth died in Ann Arbor, Michigan, on December 4, 1925.

In the college year 1899-00, Dr. John Clayton Gifford (D. Oec., Munich, 1899) was appointed assistant professor. He had previously been connected with the New Jersey Geological Survey where he had published *The Forestal Conditions of the Coastal Plain of New Jersey*. Further, he had started the periodical *The Forester*, which later became the magazine of the American Forestry Association. He gave courses in forest history and politics [sic], forest administration and forest protection, with a “practicum” in silviculture at Axton. In later life Dr. Gifford devoted himself to tropical forestry. He was on the faculty of Miami University. He died in Miami, Florida, on June 25, 1949.

Following the resignation of Professor Roth, Dr. Judson Freeman Clark (B.S.A., Toronto, 1896; Ph.D., Cornell, 1901) was appointed assistant professor, and after six months' study in Europe started work in January 1902. Professor Clark handled courses in timber physics, mensuration, dendrology, and silviculture. After 1903 Professor Clark moved to the Pacific Northwest and for many years was the senior member of the firm of consulting foresters, Clark and Lyford, Ltd., in Vancouver, British Columbia. Dr. Clark died in 1942.

These men constituted the official faculty of the old College. But it was Dr. Fernow's custom to call in as visiting lecturers well-known specialists in fields of applied science akin to forestry. In this way Dr. W. Barton Evermann of the United States Fish Commission gave courses in fish culture. Other special lecturers were W. H. Wetmore, who spoke on marketing lumber, and Cyrus P. Whitney, who gave field demonstrations in estimating standing timber.

Dr. Fred W. Foxworthy (Ph.D., Cornell, 1904) gave instruction in botany to some of the forestry students, as assistant in the Botany Department, and to C. A. Davis, who was "preparing to act as instructor in forestry at the University of Michigan," were extended courtesies by the College of Forestry at Cornell.

In the announcements of the College of Forestry, some thirty members of the Cornell University Faculty, professors and instructors, are listed as giving instruction to the students of forestry. Many well-known names appear, particularly those of men in the fields of the natural sciences.

Reference has already been made to Dr. Fernow's *Economics of Forestry*, published while he was at Cornell. Significant also is the fact that it was in Ithaca that Dr. Fernow started the *Forestry Quarterly*. The first technical periodical of Forestry in America; it was a highly important medium for professional articles, reviews, and comments. As all foresters know, the *Quarterly* was combined with the *Proceedings of the Society of American Foresters* in January 1917 to form the *Journal of Forestry*.

During the year 1902, two popular books on forestry were published by members of the Cornell Forestry Faculty. These were *Practical Forestry* by Dr. Gifford (D. Appleton and Company, New York) and *A First Book of Forestry* by Professor Roth (Ginn and Company, Boston).

**PUBLICATIONS**

The official publications of the New York State College of Forestry at Cornell University consisted of announcements, bulletins, annual reports, and miscellaneous papers.

Beginning in 1898, announcements were issued until 1902-03. They contained the sorts of information usual to college catalogs. Published by the University as parts of its official Register, certain of the *Forestry Announcements* were reprinted by the College, some with additional material. In size these pamphlets averaged about 32 pages.

Six annual reports, for the years 1898 to 1903 — the last by Franklin C. Cornell, Acting Director, a Trustee — were printed in Albany as Assembly Documents. They averaged about 36 pages.

The first four annual reports were reprinted as three of the six bulletins. The other three
bullets were reprints of (1) an article from Science (Vol. VII, Oct. 1898), Aims and Methods of the College of Forestry; (2) a contribution to the Report of the New York State Fisheries, Game and Forest Commission, 1898; Adirondack Forest Problems, 1902; (3) Testimony by Dr. Fernow before the United States Industrial Commission, 1902.

The miscellaneous papers were also reprints. The most important were Notes submitted to the Attorney General of the State, in February 1904, by Edward M. Shepard; The Public Interest Involved in the Cornell Forestry Experiment, with a letter from Professor Rossiter W. Raymond of Brooklyn, New York, on The Governor's Forest Policy. The author of this brief, Edward M. Shepard, spoke with authority, having been one of the four members of the State Commission of 1884 which recommended the legislation that in 1885 became the organic forest law of New York State. Professor Rossiter W. Raymond was Secretary of the American Institute of Mining Engineers. From personal observations in various parts of this and other countries, made in connection with his own professional work, he had been convinced of the value and importance of forestry and so had become one of its supporters.

Copies of the publications and documents mentioned in this chapter may be found in the main building of the Cornell University Library, or in the Library of the New York State College of Agriculture at Ithaca, New York.

THE ADIRONDACK EXPERIMENT

In coming to Cornell, the second main problem which Dr. Fernow faced was the inauguration of a demonstration of forest management. For the latter, a tract of 30,000 acres was to be acquired in the Adirondacks, under special legislation which exempted the tract from the provisions of the Forest Preserve Law and of Article VII, Section 7. The land, in Franklin County, was bought from the Santa Clara Lumber Company. It had been cut over for pine and spruce, to be sawn into lumber. The merchantable trees that remained consisted largely of mature birch, maple, and beech, which up to that time had not been extensively logged in the Adirondacks.

In the wording of the law an actual demonstration of forest management, including cutting, seemed to be called for. After some experimental operations under what in silviculture is known as the selection system, Dr. Fernow decided that the plan of management best adapted to the local situation was to clear-cut the mature hardwoods and immediately to regenerate the forest by the artificial planting of conifers. To this end a contract was entered into with the Brooklyn Cooperage Company, which firm agreed to buy logs for staves and cordwood for wood alcohol. To be ready for the planting, forest nurseries were set up at Axton and at Wawbeek (Cross Clearing) — localities on the tract — for the production of the stock required for the plantations.

It may be said here, parenthetically, that as a part of the general plan at Axton it was Dr. Fernow's intention, later, to provide on the tract, for comparison, examples of others of the so-called "standard silvicultural systems" for the reproduction of forests. For those who are not foresters it may be added that the particular system chosen by Dr. Fernow is one that is often followed in German forests.

POPULAR REACTION AND ITS RESULTS

An almost complete lack of understanding of the purpose and methods of the technical forestry procedures which Dr. Fernow proposed to follow, quickly led to opposition to the whole project from a politically influential group of private camp owners on nearby Saranac Lake. Other complications arose, including the failure of the Legislature to provide adequate working capital. The outcome, as everyone remembers, was that enough political pressure was exerted so that in 1903 Governor B. B. Odell, Jr. vetoed the item of $10,000 in the appropriation bill for 1903-04 which provided for the support of the College of Forestry in Ithaca. Cornell University had no funds available with which to carry on the College. Consequently in June 1903, all its academic activities were suspended, its Faculty
was dismissed, and the College as an active entity came to a sudden and most unfortunate end.

It is to be remembered that in the criticism directed against the operations on the college forest at Axton, no complaint was ever made of the College itself, or of the methods followed by the Faculty in giving instruction. Indeed, in his justification of his vetoing of the appropriation, Governor Odell made the suggestion that the College as such be reinstated. A similar comment was made by the Committee on Forestry of the Assembly, but no action resulted from either suggestion.

In succeeding years recommendations were twice made to the Board of Trustees of Cornell University looking to a restoration of instruction in forestry. One was a memorandum submitted by Trustee John DeWitt Warner in November 1906. The other, a communication from Colonel William F. Fox, Superintendent of State Forests, in April 1907, “in regard to the reestablishment of the College of Forestry.” Both seem to have died in Committee.

**DISPOSITION OF THE LANDS AT AXTON**

That the affairs of the College might be brought to a conclusion, both in Ithaca and at Axton, one of the members of the Board of Trustees, Franklin C. Cornell, was appointed Director. The final annual report, that for the year 1902-03, published in January 1904, is made over his name. As the Act of 1898 was not repealed, the title of Director passed later, for legal reasons, to other members of the Board. In the years around 1912 it was held by Mynderse Van Cleef, University Attorney.

The stopping of the cutting at Axton led to long-continued litigation, initiated by the Brooklyn Cooperage Company, in the attempt to recover damage for breach of contract. The final decision of the Court of Appeals in these cases was not rendered until March 1912 (205 N.Y. 531). In April 1912, pursuant to that judgment, the tract at Axton was conveyed to the People of the State of New York and became a part of the Adirondack Forest Preserve.

Adequately to appraise the “Axton Experiment” would require a much more extended consideration than is pertinent to this particular review of Forestry at Cornell. Even after forty-odd years the issues involved in the Axton situation still remain controversial. It may well be that the final word regarding this experiment can best be said by someone who had no part whatsoever in it, or in the reactions to which it gave rise.

**CERTAIN HISTORICAL NOTES**

Because certain papers in the case have historical interest, it is appropriate that a few citations be given here. The adverse report of the Adirondack Committee of the Assembly of 1902 may be found in Assembly Documents, Session of 1903 (Vol. IX, No. 46, pages 4 to 11). For the veto message of Governor Odell, see *Messages of the Governors*, Lincoln, (Vol. 10, pages 555 and 605 and 606) 1903; and for the reaction of Cornell University to that veto, President Jacob Gould Schurman’s statement, *The Crisis in the College of Forestry*, in *the President’s Report for 1902–3* (pages 35 to 38, Ithaca, New York, 1903). Dr. Fernow’s own observations on the suspension of the College are given briefly in two notes in the *Forestry Quarterly* (Vol. 1, No. 4, July, 1903, pages 156 and 157 and Vol. 2, No. 1, November, 1903, pages 42 to 44); and four years later, March 1907, in a letter to *Outlook* magazine (Vol. 85, pages 624 and 625, New York).

In this same general connection it may be noted that in a message to the Legislature on January 6, 1904, Governor Odell again reviewed the Axton situation, exonerated Cornell University from blame and added: “Neither should the school it [Cornell] founded be discontinued, because with the lapse of years a proper understanding of scientific forestry will become more and more a necessity. This is particularly true of farm forestry, which will form an important part in the future of agriculture within the State.”

In a somewhat similar vein the Adirondack Committee of the Assembly in its second report, on April 13, 1904 (Assembly Documents, 1904, Vol. 22, No. 60, pages 5 and 6), after saying that the Axton contract should be stopped, went on: “We think it right that the State should make a
reasonable appropriation to continue the Forestry School established at Axton in connection with Cornell University, so that the students can complete the course of study.”

Commenting on these recommendations, Dr. H. H. Horner, in his report, State Support of Forestry Education, May, 1933, said (page 37): “Notwithstanding the apparent judgment of both Governor Odell and the Adirondack Committee that the College of Forestry should be continued, no further appropriations were made for its maintenance.”

In 1924 as a contribution to the Cornell Forester for that year, — the Annual of the Cornell Forestry Club (Vol. 4, pages 9 to 14) — Professor A. B. Recknagel wrote an article called The Story of Axton. It is a carefully written, impartial account of the Axton experiment. It deserves special mention in this list of Axton references, even if that Cornell Forester has been long out of print and is now available for reference in only a few libraries.

LOOKING BACK FIFTY YEARS

For those whose memories do not now run back as far as fifty years, a few comments may help to bring into correct perspective some of the happenings which led up to the suspension of the New York State College of Forestry at Cornell University.

It is hard to realize, without having experienced it, the change in the public's point of view of forestry which has taken place in this country in the past half century. Then, save by a comparatively small group of far-sighted persons, even the broad principles of forestry were only vaguely understood. Very few indeed knew anything of the theories that support forestry practice, or realized that there had been developed abroad systems of silviculture which when followed result in specific types and kinds of forest. Also to many, as unfortunately is still true today, forestry seemed to center in tree planting, rather than in the management of forests. Several years had still to pass before Theodore Roosevelt was to stand forth as the apostle of forestry and of conservation.

Next, in New York State, the situation was further complicated by the prevalence of the idea that the portion of the Adirondack forest that is owned by the State — the Forest Preserve — should be held and treated only as a park. This concept had been built up in a systematic way over a thirty-year period. It had resulted in the amendment to the State Constitution known as VII-7. Upholding this concept (as it still does today) was the active and politically powerful Association for the Protection of the Adirondacks. Made up for the most part of wealthy owners of private camps and “private preserves” in the Adirondack Region, any proposed treatment of the state forest which involved logging met with the instant disfavor of this Association.

Typical was an outburst in a public hearing before the Conservation Committee of the State Senate, held in Albany in 1924, when a prominent member of the Association referred to Dr. Fernow as “the man who introduced into the Adirondacks the iniquitous cutting of hardwoods.” The attack on the system of forest management used by Dr. Fernow at Axton came from a group of camp owners on upper Saranac Lake who were extremists in these views.

Personalities also entered into the Axton situation. Dr. Fernow was a specialist trained in a Prussian School of Forestry. He did not take kindly to popular criticism of technical matters. And for all his twelve years in Washington he had not then learned fully to appreciate the power of skillfully directed adverse public opinion. It is possible that the crisis at Axton might have been averted had Dr. Fernow been willing to frame a working policy that took into account certain local administrative difficulties, rather than one based strictly on points of forestry technique. But those who so maintain perhaps did not know Dr. B. E. Fernow personally, and especially at the turn of the century.

The Axton tract was by no means an ideal area for the experiment. Most of it had already been logged for softwoods. Colonel Fox’s original suggestion, as adopted by Governor Black, was that the College of Forestry be given a tract of virgin forest. But when the choice came to be
made only three tracts appear to have been available. One was regarded as obviously unfit. One, at Blue Mountain Lake, was ruled out as being inaccessible. That at Axton was, in Dr. Fernow’s own words, practically “Hobson’s choice.”

As working capital with which to carry on the logging contract, the Legislature appropriated a lump sum of only $30,000, rather than the none too large figure of $50,000, as requested. There were other unforeseen handicaps for which no blame attaches to the College of Forestry. The problem at Axton was by no means a simple one. It is only just to Dr. Fernow that these facts be borne in mind in any fair consideration of this experiment.

**FORESTERS VISIT THE AXTON PLANTATIONS**

Approaching the matter from a different angle, after a lapse of fifteen years in the summer of 1917, a group of about a dozen representative foresters from Canada and the United States, with Dr. Fernow as one of the party, visited the forest plantations at Axton established by him from 1899 to 1902. After a thorough inspection, it was the unanimous opinion of the group that the predictions made by Dr. Fernow as to what was to be expected from these plantations had been amply borne out by the growth made by the trees in them.

This is set forth in detail in an article in the *Journal of Forestry* for November 1917 (Vol. XV, pages 891 to 895), *Silviculture at Axton and in the Adirondacks Generally*, by Professor Ralph C. Bryant of the Yale School of Forestry, who acted as spokesman for the group. The findings of this jury of mature foresters were summed up in these words: “There is no better vindication of Dr Fernow’s policy than the present condition of the logged-off areas near Wawbeek. All plantations which were made under twelve different conditions have proved entirely successful.”

In the December 1917 *Journal* (Vol. XV, pages 988 to 990), Dr. Fernow enumerates the species used and tells the source of the seed, thus rounding out the information concerning the Axton plantings.

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**THE STUDENTS**

In his annual reports, Dr. Fernow notes by classes the number of students of professional forestry enrolled each year. Some were listed as regular, some as special students. Of the “special” students, Dr. Fernow recognized several grades: one-, two-, three- and four-year specials. Some of these men already held bachelor’s degrees in arts or science. Depending on his previous training, each man was fitted into the program in the ways that were most helpful to him. Many went out to good positions in forestry without being granted the degree of Forest Engineer.

Based on a careful rechecking of the issues of the *Cornell University Register* from 1898–99 to 1903–04 inclusive, made by Professor Hosmer in 1943, the grand total of men who received professional instruction in forestry at the New York State College of Forestry at Cornell University can be set at 114. This total is made up as follows:

- Those who were awarded the degree of Forest Engineer .................. 17
- Students of the College who continued in forestry, for the most part with a degree other than Forest Engineer from Cornell, or with forestry degrees from other institutions ............... 33
- Students of the College who did not remain in forestry, but who received degrees from Cornell or other institutions .......................... 29
- Men who registered as undergraduates of the College, but who did not continue to a degree .................. 29
- Graduate students who did certain work in the College of Forestry ........ 6

Total 114

The table on page 13 is based on Dr. Fernow’s Reports, corrected by checking with the Registers. The significant thing about this student record of the first school for the teaching of professional forestry in North America is the steady and rapid growth in its enrollment.

Allowing for duplication the actual number of men was 114, not 164.
ENROLLMENT OF STUDENTS OF PROFESSIONAL FORESTRY, NEW YORK STATE COLLEGE OF FORESTRY AT CORNELL UNIVERSITY, 1899 TO 1903

<table>
<thead>
<tr>
<th>Years</th>
<th>Regular students</th>
<th>Special students</th>
<th>Graduates</th>
<th>Total</th>
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<td>2</td>
<td>1</td>
<td>1</td>
</tr>
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<td>1899-00</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>6</td>
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<tr>
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<td>2</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>1901-02</td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>1902-03</td>
<td>2</td>
<td>8</td>
<td>12</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

NON-PROFESSIONAL STUDENTS

In addition to the courses designed for the regular and special students of professional forestry, instruction was likewise offered to students in other colleges of the University; more especially Arts (Department of Political Economy), Agriculture, Architecture, and Civil Engineering. For the architects and civil engineers, a course was offered in “timber physics.” The record of the enrollment in these courses is incomplete, but the following figures indicate that they attracted students. The enrollments were: 1898–99, autumn term 31, spring 26; 1899–00, autumn 25; 1900–01, autumn 29; 1901–02, figures not available; 1902–03, autumn 62, spring 70. No attempt has been made to consider those students who registered in the non-professional courses.

DEGREE

The first degree to be conferred on the graduates of the College in 1900 and 1901, was Bachelor of Science of Forestry (B.S.F.). In 1902 the degree was changed to Forest Engineer (F.E.). Says Dr. Fernow, in his Fourth Annual Report, page 8: “This degree, it is believed, expresses more adequately than the former academic one the fact that not a science but an art of technical character has been studied as a profession; it is a title indicating practical rather than literary attainments and describes the work for which the student has been prepared, namely, the application of technical scientific knowledge to a business and in a productive industry.”

That the change was approved by Cornell Foresters is attested by the fact that at least two members of the Class of 1901 cite their forestry degrees as F.E. although actually the degree conferred on them was B.S.F.

In a letter to Professor Hosmer, dated May 29, 1942, Dr. John C. Gifford said that the title Forest Engineer was proposed by him and accepted by Dr. Fernow. He points out that while its use was not continued in the United States, Forest Engineer became the recognized title for foresters in the Dominion of Canada. This is evidenced by the name of the professional organization, The Canadian Society of Forest Engineers. In any event, the degree Forest Engineer was first awarded by Cornell University.

This is not the place to elaborate concerning those who as regular or as special students made up the undergraduate body in the “old” College of Forestry at Cornell, nor to recount their individual records. But it may be of interest to quote this statement by Dr. Fernow, in his Report for the year 1899–1900: “During the year the first graduate of this College — the first graduate of any professional forestry school on this continent — has gone out and found ready employment with the New York State Forest, Fish and Game Commission.” This of course refers to Ralph Clement Bryant, in later years a member of the Staff of the Yale School of Forestry.

In the next year, 1901, five men were graduated: Theodore F. Borst, Abraham Knechtel, Walter Mulford, Clifford R. Pettis, and Raphael Zon; well-known names in American forestry.

In 1902 the degree Forest Engineer was conferred on two men: Willard Weld Clark and Ernest Albert Sterling. And in 1903 on two more: Roland D. Craig, B.S., and Asa Starkweather Williams.

Although the College was suspended in June 1903, at which time all instruction in forestry ceased, the official Cornell Commencement programs show that the degree Forest Engineer was again conferred, in 1904, on Harold Russel Bristol, Frederick Dunlap, Gerard Bramley Lull, Charles Albert Lyford, and Louis Margolin; likewise in 1906, on Irving Tupper Worthley and in 1907 on William Chambers Shepard. This makes a total of 17 men who actually received the forestry degree from Cornell.
Besides these 17—out of the 114 men who were enrolled in the College of Forestry as regular or special students—33 more entered the active practice of forestry as a profession. As is at once evident to any forester who reads their names, the list includes many who have proved themselves leaders in Forestry in positions of high responsibility under the Federal Government, in the service of individual States, in private employ, or in the Dominion of Canada.

Of the six men enrolled as graduate students, two became leaders in forestry: Philip W. Ayres of New Hampshire and Judson F. Clark of Vancouver, B.C. The other four did not continue in forestry.

Arranged under half a dozen heads, in which their major work was performed, there follows a list of the 35 men other than those who received the degree of Forest Engineer. Most of them, after 1903, transferred to other schools of forestry or gained at Cornell another degree than Forest Engineer.

*United States Forest Service:*


*State Work (including Canada and the Philippines):*


*United States Indian Service:*

J. P Kinney, W. H. von Bayer

*Schools of Forestry:*

E. G. Cheyney, H. M. Curran, J. H. Ramskill, K. W. Woodward

*Consulting Foresters:*

J. F. Clark, P. L. Lyford

*Industry:*


These 52 men (17 with degrees of Forest Engineer and 35 with other degrees) constitute the original “Cornell Foresters,” a notable group because of the contributions its members made to American forestry.

The records established by those who studied in Ithaca at the College of Forestry constitute the best possible testimony as to the soundness of the training and the breadth of outlook which Dr. Fernow gave his students. Short lived as most unfortunately it proved to be, the New York State College of Forestry at Cornell University holds a unique place in the history of forestry in North America. It is remembered with respect and with honor.
The Department of Forestry of the New York State College of Agriculture at Cornell University

CHAPTER 2

THE START OF THE NEW DEPARTMENT

The second section of the story of Forestry at Cornell is a part of the development of the New York State College of Agriculture under the inspiring leadership of Dr. Liberty Hyde Bailey, who was its Director from 1903 to 1913.

Thinking in terms of broad horizons, Dr. Bailey held forestry to be one of the integral units in a properly organized College of Agriculture. Accordingly, as early as in a statement made in 1903, before the College of Agriculture was established, and again in his annual report for 1905-06, he recommended that such a department be set up in the New York State College of Agriculture at Cornell University. Similar recommendations were repeated in his reports for 1906-07, 1907-08, and 1909-10.

Finally in 1910, during an interval when Dr. Bailey was on leave and Professor H. J. Webber was Acting Director, the Trustees of Cornell University, at meetings on June 23 and July 9, 1910, authorized the establishment of a Department of Forestry, and allotted to it, from the state appropriation, the sum of $4400 for the college year 1910-11.

On November 7, 1910, provisional plans were drawn up by Dean Bailey and Professor Mulford and on December 17, 1910, on nomination of President Schurman, Walter Mulford was, by ballot, elected Professor of Forestry in the New York State College of Agriculture, effective at the beginning of the academic year 1911-12. He thus became the first head of the new department.

Professor Mulford had received the degrees Bachelor of Science in Agriculture (B.S.A.) from Cornell in 1899 and that of Forest Engineer in 1901. He was at that time Junior Professor of Forestry at the University of Michigan. He had been State Forester of Connecticut from 1901 to 1904, and was with the United States Forest Service in 1904-05.

Professor Mulford was on duty in Ithaca from January 26 to February 23, 1911. He took up his residence in Ithaca on June 15, 1911. An interesting sidelight is set forth by him in his report as Professor of Forestry in the annual report of the College for 1912-13 (pages LXXIX-LXXX). When Dean Bailey first approached him to become Professor of Forestry, Mr. Mulford "immediately suggested that Professor Roth, the Head of the Department of Forestry at the University of Michigan, be asked to come to Cornell as Head of the Department and to start the professional course at once." Dean Bailey agreed. But this plan had to be postponed because of lack of funds.

The Minutes of the Board of Trustees show that on June 21, 1911, Professor Roth was recommended for appointment and that on January 6, 1912, he was appointed as Professor of Forestry and Head of the Department of Forestry in the New York State College of Agriculture, to take effect at the beginning of the next university year. During the spring of 1912, however, Professor Roth decided to remain at the University of
Michigan. Consequently, the task of getting the Cornell Department of Forestry under way rested solely on Professor Mulford.

The record is perfectly clear as to what Dean Bailey had in mind as the objectives of the Department of Forestry. In a letter to Professor Mulford, dated October 13, 1910— as quoted by him in the annual report of the College for 1912-13— Dr. Bailey said: “I want to reach the farm-forest situation in the State as a part of our regular work. I want at the same time to train professional foresters, and I think the facilities will be got for it.” In reply Mr. Mulford said: “These two lines of effort . . . are both vital. And I hope that Cornell will soon be able to add a third very important line of forest work,—a thoroughly equipped forest experiment station at Ithaca, as a part of the Agricultural Experiment Station.”

The functions of the Department of Forestry, as conceived by Dean Bailey, are further set forth in a letter written by him to President Schurman, under date of December 11, 1911, in which at some length he explains the basis needed for the establishment of an adequate school of forestry, and makes clear that “the whole subject must be developed in order to have teaching of forestry that is really substantial and worth the while . . . . It will be impossible to secure the best men if the department is limited merely to what is called farm forestry.”

This letter is quoted in a Statement on the Forestry Situation (a twelve-page leaflet, page 10), made in Rochester, New York, December 22, 1913, by L. H. Bailey to the Governors of the Cornell Club of Rochester.

The Cornell Department of Forestry was, then, from the start charged with the dual responsibility of developing and maintaining a curriculum which, first, should train men for the practice of forestry as a profession, and, second, and at the same time, offer to other students instruction of a non-professional character, especially in farm forestry. To its teaching function was at once added that of conducting extension work in forestry. And, after a few years, there followed a definite program of forest research.

DEVELOPMENTS

With these as its administrative objectives, the Cornell Department of Forestry was also guided by a central dominating ideal. Strongly held by all members of the Staff was the belief that—because of the biological and economic importance of forests to every nation—forestry is entitled to rank as one of the recognized professions. Under this concept the initial aim of their teaching was (1) to provide a curriculum that was truly professional in character; and (2) to make sure that the training given their students should be sufficiently broad and rounded to equip those who successfully completed the program to carry on properly the forestry enterprises of nation, state, and private industry.

Supported entirely by annual appropriations by the State of New York, which never exceeded $50,000, and entirely without endowment, the Cornell Department of Forestry carried out this program for a period of twenty-five years; from 1911 to 1936. It graduated a total of 378 students: 351 with the degree of Bachelor of Science, and, allowing for duplications, 86 with that of Master in Forestry. It made various contributions of other sorts to forestry, as is pointed out later. And, not to be forgotten, it won and held the respect of the profession of forestry to the extent that throughout that quarter-century period the Cornell Department of Forestry was recognized as being in rank one of the first half dozen of the twenty-odd schools of forestry in the United States. This last statement is supported and borne out by two tables (pages XIII and 6) in the Professional Forestry Schools Report, by H. H. Chapman, Society of American Foresters, Washington, D.C., 1935, that show (1) the standing of the forest schools on the basis of distinction in teaching and (2) the relative grades of twenty schools.

Then, in the mid-thirties, came the change of University policy as to the teaching of forestry at Cornell which led to the order by the Cornell Board of Trustees that undergraduate instruction in professional forestry be terminated in June 1936; to be followed a year later by the further
withdrawal of all professional instruction in forestry, graduate as well as undergraduate. Since then the emphasis in its (now non-professional) teaching of forestry has centered on farm forestry.

In the following pages are recorded the more significant steps in the story of the Cornell Department of Forestry; with especial relation to the years when it was a professional school.

**CHAPTER 3**

**FACULTY AND OTHER STAFF MEMBERS**

**THE SENIOR MEMBERS OF THE STAFF**

The first task facing Professor Mulford in getting the new department under way was the selection and recommendation to Dean Bailey of candidates for members of the forestry faculty. The first to be chosen was John Bentley, Jr., who joined the staff as assistant professor on January 1, 1912. He was graduated from Wesleyan University, Middletown, Connecticut, in 1904, with the degree of Bachelor of Science, and from Yale University with the degree of Master of Forestry in 1907. At Wesleyan he won Phi Beta Kappa. At Yale he was elected to Sigma XI. He had been in private employ as a forester and had been a Deputy Supervisor in the United States Forest Service in Colorado.

For the first two years Bentley’s duties were divided between teaching and Extension. After 1914, teaching was his main vocation. In 1918, he was promoted to the rank of full professor. He was known as Professor of Forest Engineering. He also taught the courses in forest mensuration. As he was well versed in dendrology, he gave several courses in that subject. Professor Bentley served Cornell until his untimely death on July 26, 1933.

John Bentley is remembered as a teacher who inspired his students and, through his qualities of genuineness and leadership, made them his lifelong friends.

The next member of the teaching staff to be appointed was Samuel Newton Spring, who was called to Cornell as full professor in September 1912. Dr. Spring received the degree of Bachelor of Arts from Yale in 1898 and that of Master of Forestry in 1903, and an honorary degree (LL.D.) from Syracuse University in 1944. He had been Professor of Forestry at the University of Maine from 1903 to 1905, and with the United States Forest Service from 1905 to 1909. He held the office of State Forester of Connecticut from 1909 to 1912. He served as Professor of Silviculture at Cornell from 1912 to 1931, when he resigned to go to the New York State College of Forestry at Syracuse University as Assistant Dean. He was Dean of that College from 1933 to 1944.

At Cornell, Professor Spring’s specialty was silviculture. He taught the courses dealing with that subject. Because of his personality and temperament, coupled with his wide experience, “Sam” Spring was ever a respected and beloved member of Cornell’s Forestry Faculty.

In February 1913, Arthur Bernard Recknagel became full professor and served as Professor of Forest Management and Utilization. He received the degree of Bachelor of Arts from Yale in 1904, and that of Master of Forestry *magna cum laude* in 1906; he also was elected to Sigma Xi. From 1906 to 1908 he was Chief of Reconnaissance, United States Forest Service, and from 1908 to 1912 Assistant Chief of Silviculture in District (now Region) Three, in the Southwest. Immediately before coming to Cornell, Professor Recknagel had spent twelve months in advanced study at the Eberswalde Forst Akademie in Germany and in visits to typical European forests. As his
title indicates, Professor Recknagel's chief interest was always forest management, but he handled as well the courses in utilization and, especially after 1937, those in farm forestry. On July 1, 1942, Recknagel became Head of the Department. He retired on December 15, 1943, when he re-entered the United States Forest Service in the timber production war project. In the spring of 1948 "A.B.R." was appointed Technical Director of Forestry of the St. Regis Paper Company, whose properties are found in many parts of the United States and Canada.

On October 1, 1913, Frank B. Moody joined the Department as full professor of forestry and became the Extension Forester. His duties were mainly along those lines, but in the years 1913–14 and 1914–15 he taught Forestry 1, The Farm Woodlot, in both terms (page 36). Professor Moody resigned on September 30, 1915, to become Forest Commissioner of Wisconsin. He died in office in 1918.

In his annual report for 1913–14 Professor Mulford notes, with evident satisfaction, that "During this year the faculty consisted of four full professors and one assistant professor." This comment is repeated here as an indication that the Cornell Department of Forestry was rapidly taking its place as a well-organized school of forestry.

The next major change in the faculty was caused by the resignation of Professor Mulford, effective September 30, 1914, to take charge of the forestry work at the University of California. Professor Mulford served as the Head of the Department of Forestry at that University until his retirement in June 1947.

To succeed him at Cornell as Head of the Department of Forestry, from October 1, 1914, Ralph Sheldon Hosmer was called from the position of Territorial Forester of Hawaii, which he had held since January 1904. Mr. Hosmer received the degrees Bachelor of Agricultural Science from Harvard in 1894 and Master of Forestry from Yale in 1902, the latter as a member of the first class of the Yale School of Forestry. He entered the then Division of Forestry of the United States Department of Agriculture under Gilford Pinchot in the autumn of 1898, and served in that Division and Bureau—until going to Hawaii. There he was Chairman of the Hawaiian Conservation Commission and Vice-President of the Board of Regents of the then College, later University, of Hawaii. He accompanied Governor Frear of Hawaii as one of his so-called "advisors" to the Conference of the Governors at the White House in Washington in May 1908. He was one of the seven charter members of the Society of American Foresters in 1900.

In his work at Cornell, Professor Hosmer taught the courses offered to the students of professional forestry in forest history, forest policy, and forest protection. He also gave for other students a general introductory course on forestry under the title The Field of Forestry. Always deeply concerned with all phases of conservation, he was one of the lecturers in the well-attended course known as Wildlife Conservation. From 1937 to 1942 he gave to the students enrolled in the wildlife-management program a course dealing with the administrative phases of wildlife management as carried on in various bureaus of the Federal and the State Governments.

Professor Hosmer retired and was made Professor of Forestry Emeritus on June 30, 1942.

On October 1, 1915, Cedric Hay Guise was appointed Instructor, to handle part of the Extension work. Mr. Guise's undergraduate work was performed partly at Cornell and partly at the University of Michigan under Professor Filibert Roth. He holds from Cornell the degree of Bachelor of Science (1914) and that of Master of Forestry (1915). He was elected to Sigma Xi at Cornell. In 1916, his thesis for the Master's degree, Possibilities of Private Forest Management in New York State, was published as Cornell University Agricultural Experiment Station Bulletin 375.

Following service during World War I as instructor at the United States Army School of Military Aeronautics in Ithaca, Mr. Guise returned to the Department of Forestry in January 1919 as one of the teaching members of its faculty. On July 1, 1921, he was advanced to the position of Assistant Professor of Forest Manage-
ment, and in October 1933 he was made full professor. In his teaching, Professor Guise’s interests lay in forest management, with particular reference to its mathematical side and to forest finance. For many years he was the efficient secretary of the Forestry Staff. Because of the departmental reorganization in 1937, Professor Guise was transferred on February 15 of that year to the Office of Resident Instruction of the College of Agriculture, as Professor in Personnel Administration. There for seven years he served as “the Davy Hoy of Agriculture.”

In 1944, Professor Guise succeeded Professor Recknagel as Professor of Forestry and Head of the Department of Forestry. The latter office he held until September 1948, when the Department of Forestry was merged with the new Department of Conservation. Professor Guise continues to teach the courses in farm forestry.

The vacancy caused by the resignation of Professor Moody was filled on July 1, 1916, by the appointment of G. Harris Collingwood as Assistant Professor in charge of Extension (page 35). He served until June 1924 when he resigned to become Extension Forester in the United States Department of Agriculture. Later he joined the American Forestry Association as Forester and Assistant Secretary. He has since held positions of importance in the Forest industries, with headquarters in Washington, D.C.

Prior to the World War I, Extension professors Moody and Collingwood taught the course in farm forestry, a procedure that was not continued later.

One other forester is to be noted as having had from the early days of the Department an important role in its teaching. This is Professor Bristow Adams (A.B., Stanford, 1900), Editor of the College of Agriculture from 1914 to 1945, lecturer on Agricultural Journalism, and in charge as well of various other functions of the College. Prior to coming to Cornell in 1914, Professor Adams had been a member of the United States Forest Service under Gifford Pinchot. He had had wide experience in the National Forests in the West and in various matters pertaining to professional forestry. His non-professional lecture course on Conservation, given twice a week in the second term, continued to be a feature of the Forestry program from its inception in 1916 to his retirement in 1945. Always popular, the attendance taxed the seating capacity of Fernow 122. While technically not a member of the Department of Forestry, Professor Adams because of similarity of interest and warm friendship was closely associated through the years with the Forestry group. He was always welcome when he took part in the meetings of the Staff or lent his aid in its deliberations.

**SIMILAR BACKGROUNDS AND AIMS**

This somewhat detailed enumeration of the initial members of the Forestry Staff and of their teaching duties is made for the light it throws on the personnel of the Cornell Department of Forestry Faculty after 1914. It indicates something of the background of the men involved. One interesting feature of the story is that for nearly twenty years there was no break in the group of the five teaching members. What is more significant is the harmonious team work which characterized this group during that long period. It was a happy circumstance that in kindred interests, points of view, and professional ideals there was essential agreement among these men on most of the important points related to the interests of the Department. A large share of whatever achievements the Cornell Department of Forestry has to its credit is due to the fact that these men could, and did, work effectively together. This gave morale both to the individuals and to the Department.

All these men had had the advantage of broad collegiate training prior to graduate work for a professional degree. All the older men had served in the United States Forest Service, under Gifford Pinchot. As alumni of the Yale Forest School they had been in direct contact with Dean Henry S. Graves and Professor James W. Touney. They were all actuated by the ideals and professional standards which meant so much to the leaders in that first period of American forestry.

All were familiar with the application of forestry practice in the field and all were men who
had had experience with the every-day problems of forest administration. There was no question in the minds of any of them that in their duty to train young men for the practice of forestry as a profession they had a job which called for the best they had to give.

**OTHER FACULTY MEMBERS**

When, in later years, other foresters regularly joined the staff—Joshua A. Cope, James D. Pond, J. Nelson Spaeth, Michel Afanasiev, and more recently Ellis F. Wallihan and Fred E. Winch, Jr.—they, also, fitted into this Cornell picture and took their places as loyal members of the team (pages 37 and 42). They, too, were animated by the esprit de corps that characterized the Department of Forestry.

For short periods, as exchange professors or to fill temporary vacancies, the teaching staff was supplemented by foresters from other schools of forestry or who were in other ways known in the profession. Thus in the summer of 1917, and again in 1929, Professor Ralph C. Bryant of Yale taught certain courses and handled certain work in the summer camps. In that Professor Bryant was the first graduate of the (old) New York State College of Forestry at Cornell University, these services to the Department were reason for particular satisfaction to both Faculty and students.

From October 1918 to June 1920, Bernard A. Chandler (M.F., Yale, 1911), former Assistant State Forester of Vermont, acted as Assistant Professor of Forest Utilization. His duties were mainly in connection with research, but during the temporary absence of other members of the Staff, on leave, he did some teaching.

With the discontinuation of the Department of Botany in the College of Arts and Sciences, Professor Willard Winfield Rowlee was transferred to the Department of Forestry on July 1, 1922, with the title of Professor of Dendrology. Personally as well as professionally, Professor Rowlee was a welcome addition. His coming also added material strength to the Department in that it set up statutory provision for a research professorship.

It was the expectation that Professor Rowlee would devote his energies primarily to investigative work in the field of dendrology. Steadily failing health hampered him, although in the autumn of 1922 he gave instruction to a number of advanced students. To the profound regret of all who knew him, Professor Rowlee died on August 8, 1923. He enjoyed a secure reputation as a botanist. He had a host of friends and is remembered as a man whose first thought was always for the welfare of Cornell.

In the college year 1929–30, through an exchange between Cornell and the University of California, Professor Recknagel taught at Berkeley in the autumn term and Professor Emanuel Fritz (M.E., Cornell, 1908; M.F., Yale, 1914) of the Department of Forestry there, came to Ithaca from February to June 1930.

To understudy for Professor Guise while he was away on leave to collaborate with Dean Graves of Yale in the Forest Education Inquiry, 1929 to 1931, Mr. Francis I. Righter (B.S., 1923; M.F., 1928; Cornell) served as Acting Assistant Professor of Forest Management during the college year 1929–30 and from October 1, 1929 to January 31, 1931. He then returned to his position of Geneticist of the Eddy Tree Breeding Institute in California, now a part of the California Forest Experiment Station.

In 1932, to carry on the courses in silviculture following the resignation of Professor Spring, the Department was fortunate to have the services of Ellwood Wilson, for many years forester of the Laurentide Pulp and Paper Company of the Province of Quebec, and without question not only the outstanding forest planter of the Dominion of Canada but one of the leaders in Canadian forestry. As Acting Professor of Silviculture, Mr. Wilson served from February 1, 1932, through the college year 1932–33. Professor Wilson contributed to the Department in various ways during his connection with it. In both 1934 and 1935, while he continued to live in Ithaca, Professor Wilson repeated, voluntarily, a series of four lectures on “The Use of Aeroplanes and Aerial Photography in Forestry and in Logging Operations.” These were attended by students
from the College of Civil Engineering as well as by students of professional forestry.

Following the death in July 1933 of Professor John Bentley, Jr., and the ruling of the Trustees which reorganized the Department, it was arranged that during the closing period of professional instruction, some of the courses should be handled by instructors. Consequently, James D. Pond (B.S., 1928; M.F. 1934; Cornell) and Frank K. Beyer (B.S., Cornell, 1929; M.S., Wisconsin, 1930) were appointed to such positions, which they held during the college years 1933–34 and 1934–35, and Mr. Beyer into the early winter of 1935. Other instructors are mentioned in the chapters on Extension and on Research (pages 38 and 43).

**CLERICAL STAFF**

Following is a list, with dates, of the members of the clerical staff and of the Extension stenographers of the Department of Forestry.

Special mention is, however, to be made here of Miss Ella G. Van Natta, who has served the Departments of Forestry, and now Conservation, continuously since 1914, as clerk and stenographer, and later as office manager. Like the clerical members of the Forest Service in its early days in Washington, Miss Van Natta’s interest in the work and her loyalty to the Department has helped to make its machinery run smoothly and has added greatly to the efficiency of the office. She, too, has been a trusted member of the team.

<table>
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<th>Name</th>
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<td>Miss Lillian M. Holden</td>
<td>1913 to June 1914</td>
</tr>
<tr>
<td>Miss Ella G. Van Natta</td>
<td>January 1914–</td>
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<tr>
<td>Miss Ada E. Lemma</td>
<td>1915–16 to 1917–18</td>
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<tr>
<td>Miss Martha Wolff</td>
<td>1918–19 to 1919–20</td>
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<tr>
<td>Miss Mary L. Ryan</td>
<td>1920–21 to 1926–27</td>
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<td>Miss Hazel DeWitt</td>
<td>1927–28 to 1932–33</td>
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<tr>
<td>Mrs. Martha L. Baker</td>
<td>1932–33 to 1939–40</td>
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</tr>
<tr>
<td>Mrs. Helen K. Herzog</td>
<td>1941–42 and 1942–43</td>
</tr>
</tbody>
</table>

**Extension Stenographers**

<table>
<thead>
<tr>
<th>Name</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Miss Minnie Sweedler</td>
<td>1926–27 to 1928–29</td>
</tr>
<tr>
<td>Miss Beatrice Wood</td>
<td>1929–30 to 1932–34</td>
</tr>
<tr>
<td>Mrs. Beatrice Uebele</td>
<td>July 1934 to Oct. 15, 1935</td>
</tr>
<tr>
<td>Mrs. Alice Schaefer</td>
<td>Oct. 1935 to Feb. 1943</td>
</tr>
<tr>
<td>Mrs. Alice Fisher</td>
<td>Feb. 1943 to April 1943</td>
</tr>
<tr>
<td>Miss Margaret L. Shepherd</td>
<td>Apr. 1943 to Oct. 1944</td>
</tr>
<tr>
<td>Miss Alice Ryan</td>
<td>Nov. 1944 to May 1948</td>
</tr>
<tr>
<td>Mrs. Martha L. Baker</td>
<td>June 1948 to May 1950</td>
</tr>
</tbody>
</table>

**CHAPTER 4**

**TEACHING**

As set up by the Cornell Department of Forestry, the full program for the teaching of professional forestry consisted of a 4-year undergraduate course leading to the degree of Bachelor of Science, followed by one year in the Graduate School, leading to the degree of Master in Forestry. A few students continued two or more years longer in the Graduate School as candidates for the Doctorate.

**CURRICULUM**

To Professor Mulford belongs most of the credit for organizing the original curriculum of the Department of Forestry at Cornell. Himself a Cornell man (B.S.A., 1899), then a student under Dr. Fernow and an alumnus of the "old" College, and later an associate of Professor Roth at the University of Michigan, he had for that task a far wider background than most American
foresters. Further, he was one of the representatives of sixteen forest schools who had attended the special conferences in Washington, D. C. in 1909 and 1911, out of which came the Report on the Standardization of Instruction in Forestry, published in the Forestry Quarterly for September 1912 (Vol. X, No. 3, pages 341 to 394).

As was but natural, the subjects making up the original Cornell forestry-department curriculum followed closely the model suggested in that report. With the passing of the years came changes in the emphasis placed on certain subjects. The stress on silviculture was not abated, but with it more attention was given to economics. As the years went on, the doctrine of multiple use in forestry found early and sympathetic support at Cornell. Throughout, the attempt was consistently made to maintain a curriculum that should be well balanced, logical, and comprehensive; always with due regard to underlying principles. Further, in addition to following closely the new literature of the profession, the members of the staff were ever on the alert for new developments in content and arrangement of forestry curricula, as is indicated by the following examples.

At the Second National Conference on Education in Forestry, held in New Haven, Connecticut, on December 17 and 18, 1920, Professor Hosmer was chairman of the Committee on the undergraduate course leading to the bachelor’s degree, and a member of the committee on the scope and character of training for specialists in forest products. He also served as chairman of the committee to edit and publish the Proceedings. These were issued as Bulletin 1921, No. 44, of the Bureau of Education, United States Department of the Interior, Washington, D. C., 1922. Professor Spring was a member of the Committee on the course leading to the degree of Master of Forestry.

It will be recalled that Professor Guise is joint author, with Dean Henry S. Graves of Yale, of Forest Education (Yale University Press, 1932). And that from 1934 to 1950 he contributed each year to the Journal of Forestry an article on Statistics from Schools of Forestry; Degrees Granted and Enrollments. He is regarded as an expert on questions of the organization and administration of schools of forestry.

When the Division of Education of the Society of American Foresters was set up in January 1935, Professor Guise was elected its first Secretary-Treasurer, and Professor Recknagel was appointed by Chairman Samuel T. Dana as a member of the Steering Committee. From 1937 to 1943, Professor Recknagel was active in the Division of Education in pressing the consideration of how farm forestry may best be taught in colleges of agriculture and in schools of forestry.

As it appeared in the Announcements of the College of Agriculture for the earlier years, the Forestry statement differed, with one exception, from those of the other departments, in that it presented an organic, four-year undergraduate program of professional forestry, consisting of required and elective courses, a five weeks’ civil engineering summer camp, a forestry camp, and (in other summers) at least three months of practical experience in forestry work or in a logging camp. The exception among the other departments was Landscape Art, then in the College of Agriculture, which also had a required professional program. In other words, the Department of Forestry, although a unit of the College of Agriculture, was carrying on the work of a professional school. It was so regarded both by its Staff and by the Profession of Forestry. This point of view was approved by the University authorities, although it was not so specifically explained in the Announcements.

In the four-year undergraduate program for students of professional forestry, the first two years were necessarily given over for the most part to courses in the basic sciences and in English. In the junior and senior years came the professional training, covering the five main branches of Forestry. It is not necessary to discuss the details of the various courses that made up the curriculum. Outlines of them are to be found in the annual Announcements of the New York State College of Agriculture, files of which are available in the office of the Secretary of the College and in the Cornell University Library.
FIELD WORK

Because certain of the methods followed in the Department of Forestry at Cornell, from 1911 to 1936, were distinctive, brief comments on some of them follow.

First, a word of explanation as to the requirements demanded of all students when the Department was teaching professional forestry. In common with other departments of the College of Agriculture that taught highly specialized subject matter, Forestry required of its men, in lieu of farm practice, three months of practical experience in forestry work or in a lumber camp. In general, it was expected that the summer following freshman year should be used in this way. With some suggestions from the Faculty, the students were supposed to find jobs for themselves. In the early days many did this, working in logging camps following personal applications to the woods boss and gaining much of value from the work and from the association with loggers.

Others spent a summer on a national forest — usually one in the Rockies — in forest-fire prevention, road building, or other Forest Service activities. Some worked in New York State in the control of white-pine blister rust; others in saw-mills, lumber yards, or pulp and paper mills.

In theory, the idea was excellent. In practice, especially after 1930, it was sometimes hard for all the men to find jobs, even with the aid of the members of the Staff. Indeed in this way it was, thanks to the good offices of Professor Recknagel, that there developed what became almost a departmental employment agency to help students find summer jobs as undergraduates or regular positions after graduation.

Second of the requirements for students of professional forestry was the Civil Engineering Summer Camp of five weeks. This was usually taken in the sophomore summer. It ranked as one of a series of four courses in Civil Engineering which formed part of the required Forestry program and had an important place in it.

Conducted by faculty members of the College of Civil Engineering, these camps were near Ithaca. They stressed the gathering of information on which to base topographic maps, the location of roads and railroads, and other similar work. Originally, they were held in the early part of the summer, so forestry students often arranged to attend the Cornell forestry camp in the Adirondacks later that same summer. In later years, when the C.E. Camp was postponed until August and September, the foresters elected to attend it in the sophomore summer. Relations between the foresters and the engineers were always friendly. The C.E. Camp bulked large in the Forestry program.

FORESTRY CAMPS

The third and most distinctive part of Cornell's forestry field work was the Forestry Summer Camp of several weeks duration and held under real forest conditions; normally, after the plan got under way, in the Adirondacks, and from 1927 on its own land near Newcomb in Essex County.

Usually, three members of the teaching staff were in charge: Professors Recknagel, Spring, and Bentley. Later Professor Guise was sometimes on duty. For a number of years, in the early thirties, Professor Donald S. Welch, Forest Pathologist, used to spend part of the camp period at Newcomb. Attendance was limited to the members of the senior class of students in professional forestry and to graduate students in forestry, candidates for advanced degrees. The student group averaged more than twenty men.

As Professor Recknagel sums it up. “In retrospect, the outstanding value of the summer camp period was putting the teaching of forestry where it belongs, namely, in the woods. Those who experienced for the first time the meaning of vast forest areas were thereby inducted into the forestry atmosphere as could not possibly be done at any point close to Ithaca.”

TRIPS TO SOUTH CAROLINA

Another type of forestry excursion, but one which came to take a very definite and welcome place in the Cornell program, was the spring trip to the Southern States, inaugurated by Professor Recknagel in the spring recess of 1928 and con-
continued until the year of the last class of undergraduate professional students in 1936; a total of nine such excursions were made. By arranging with other departments to be away for a few days on either side of the spring recess in April, a group made up of members of the senior class had almost a fortnight for a voluntary trip to a forest tract on the Coastal Plain of South Carolina, to see southern-pine logging. Professor Recknagel was the leader. The expenses of the trip were borne by the men themselves, except that for several years Archer M. Huntington provided a fund of $400 a year which was used to reduce the cost of travel.

The forest visited was at Witherbee, South Carolina, about forty-five miles up the Cooper River from Charleston, on the lands of the North State Lumber Company of which G. J. Cherry was president. The days on the forest were spent in studying yellow-pine logging, in making growth studies, and in getting generally acquainted with a set of conditions entirely new to most of the students.

By the cooperation of officials of the Appalachian Forest Experiment Station of the United States Forest Service, the Cornell group was able to establish a number of permanent sample plots for the study of growth, which the Station will remeasure regularly. The Cornell Camp was visited several times by other Federal and State officials.

In 1934 the lands at Witherbee, South Carolina, were taken over by the United States Forest Service as a purchase area, preceding a new National Forest, which in 1935 was named the Sumter.

**GRADUATE WORK**

It was the constant endeavor of the Staff to encourage students who showed ability to enroll in the Graduate School as candidates for the degree of Master in Forestry. In this graduate year, individual study, under the direction of a faculty committee of two, was the method followed, although there was also some course work. Satisfactory completion of the requirements for the Master's degree included the preparation of a thesis and the passing of a three-hour oral examination, conducted by the candidate's committee but participated in by all members of the Forestry Staff. Work for the Doctorate was also individual in character. It was done under the direction of a committee of three professors. The teaching members of the Department of Forestry were all members of the Graduate School Faculty.

In that Forestry was held by these men to be an applied science, it was the considered opinion of the Forestry Staff that the degree Master of Forestry was a professional one; and that of Doctor of Philosophy should signify the successful completion of a worthwhile program of study, made under competent direction, in a basic science.

**CHAPTER 5**

**EDUCATIONAL EQUIPMENT**

**THE FORESTRY BUILDING**

At the start, the new Department of Forestry was assigned rooms on the third floor of the then Home Economics building, now Comstock Hall. But at a Trustees' meeting on July 3, 1911, Director Bailey was authorized to include in the appropriation requests made to the Legislature, an item for a Forestry building. This went through and, under an appropriation of $100,000 in 1912, the Forestry building was erected and made ready for occupancy in April 1914. Subsequently, $20,000 more was provided by the State "for equipment of the forestry building."

[ 24 ]
To Professor Walter Mulford belongs no little credit for the design of the building, which was the result of a series of conferences which he held with the State Architect. It is to be recalled that when dedicated in May 1914 this was the first building to be erected at any institution of learning in the United States for the specific housing of forestry classrooms and laboratories. It has served its purpose well, and by giving Forestry a designated home it assured this Department a distinctive place on the College of Agriculture Campus.

One alteration, the fireplace in the Club Room—obtained by Professor Hosmer in 1915—gave character to that room and greatly increased its value as a meeting place, not only for the Forestry Club, but for various other groups. For many years the Forestry Club Room was the only room of the sort on the Cornell Campus. So useful did it prove that it led the way to the much more elaborate ones that grace Plant Science and Warren Hall.

The new Forestry building was formally opened by a two-day meeting on May 15 and 16, 1914, of which the Proceedings were printed as an Official Publication of Cornell University (Vol. V, No. 19, December 1914). A considerable company, representative of all the more important forestry interests in the East, was present and in morning, afternoon, and evening sessions listened to carefully prepared addresses by well-known speakers. The general topic was Principal Lines of Effort in American Forestry for the Next Decade. In the evening, Dean Bailey was the first speaker. Mr. Gifford Pinchot gave the principal address, The National Movement for Conservation. On May 16 was an open meeting of the Society of American Foresters, the first ever to have been held out of Washington. Dr. Bernard E. Fernow, Head of the Faculty of Forestry at the University of Toronto, Canada, the President that year of the Society, was in the chair, and gave the main address. Another speaker was Professor Filibert Roth, Director of the Department of Forestry at the University of Michigan. So was the old College of Forestry tied in with the new department on that auspicious day.

FERNOW HALL

Jumping ahead over the years note may be made of the change in name of the Forestry building on October 5, 1922, when the tablet over the main entrance bearing the name Fernow Hall was unveiled with appropriate ceremony. For several years the Forestry Staff had been working to obtain this change. At first their recommendations met opposition in the Board of Trustees. Finally, on June 20, 1922, permission was granted and the name Fernow Hall authorized.

Unfortunately, Dr. Fernow's health was such at that time that he was unable to make the journey from Toronto. But news that the Cornell Forestry building was to be renamed Fernow Hall had gone out widely. As a result many letters of felicitation poured in on him as the occasion drew near.

The high spots in the ceremony at Ithaca were the unveiling of the tablet by Dr. Fernow's son, Professor Karl H. Fernow, and the perfect tribute paid Dr. Fernow by the President of Cornell University, Dr. Livingston Farrand. It is to be found in the Journal of Forestry for April 1923 (Vol. 21, No. 4). To all foresters, both in the United States and in Canada, it was an occasion for rejoicing that this official recognition by Cornell University of the lifelong service of Dr. Fernow to forestry should have come while he could have the satisfaction of knowing of it. It lightened the shadow of the increasing infirmity of his latter days. Dr. Fernow died in Toronto, Ontario, Canada, on February 6, 1923.

FERNOW PORTRAITS AND TABLET

In this connection it is appropriate to mention the gift made to Cornell University in June 1933 by Mrs. Fernow—a portrait of her husband which now hangs in the entrance way of Fernow Hall. It was painted in oils by Mrs. Bernice Paul ahi A. Fernow (Mrs. B. E. Fernow, Jr.). It depicts Dr. Fernow at the time he was Director and Dean of the College of Forestry at Cornell. Although based on the artist's memory of him, and on photographs, it is thought by those who knew Dr. Fernow then to be an excellent likeness. It
shows him in field garb, with a forest background.

Also in the spring of 1933 was put in place the bronze tablet in memory of Dr. Fernow erected by Cornell University. It faces the main entrance to Fernow Hall. It adds the final touch needed to make Fernow Hall render full tribute to the man whose name it bears.

In another room is a sizable and beautifully executed enlargement of an excellent photograph of Dr. Fernow as he was in late maturity. This picture was made with especial care by the late Mr. John Troy, former University photographer, as a tribute to the memory of his friend Dr. Fernow. It bears this sentence, taken from Dr. Fernow's letter to Professor Hosmer read at the unveiling: “To your students I recommend the adoption of my motto, borrowed from Horace, Carpe diem — doing the duty of the day — with confidence in the due development of the future.”

MEMORIAL WINDOW

Another jump ahead may be permitted to include mention of another tribute; the memorial window in Sage Chapel made and given to honor both Doctor and Mrs. Fernow. This window, of Tiffany glass, was the work of the donor, Miss Jessie Van Brunt of Brooklyn, New York, a lifelong friend of Mrs. Fernow. It represents a forested landscape, rising to distant hills.

The dedicatory exercises were simple. They followed the regular chapel service on Sunday, October 25, 1942, and consisted of a brief address by Professor Hosmer on Dr. Fernow's life and work, and the formal acceptance of the window by the Provost of Cornell University, H. W. Peters. The donor was present but did not speak. Members of the Fernow family and friends of Doctor and Mrs. Fernow made up the audience.

WOODLANDS AND FORESTS

THE CORNELL WOODLOTS

To make available for educational use areas of woodland within easy reach of the Campus, the Board of Trustees turned over to the Department of Forestry, by action taken on July 31, 1911, the woodlots belonging to the College of Agriculture, and also the rise of land north of the Plant Breeding Garden known as Comstock Knoll. The latter was at once planted with pine trees, and a small forest nursery laid out on its south side.

The several woodlots, of varying size, aggregated 80 acres. In later years two were transferred to other departments, while other additional areas were set apart for Forestry. The total acreage in 1942 was 131 acres. At once the woodlots were given names, surveyed, estimated, and put under definite forest management. All this, of course, helped to provide field work for the forestry students, and continued to do so through the years.

The story of how these over-cut, grazed, and maltreated woodlots were brought back into productive condition, yielding today a full cord of wood per acre per year, is told in the two Cornell Extension Bulletins 113 and 292 by Professor A. B. Recknagel, Ten Years and Twenty Years Management of the Cornell Woodlots, published in 1925 and 1934. Useful as demonstration areas, the Cornell woodlots were indispensable as out-of-door laboratories for all groups of forestry students, whether in professional courses, in farm forestry, in summer schools, or in the short winter courses. They are now serving still another function, the demonstration of recreational and aesthetic values, in connection with the Cornell Plantations.

PLANTATIONS AT VARNA

With the thought that it might sometime regulate the flow of Fall Creek, by erecting a dam a little above the village of Varna, and so creating an artificial lake, the University bought up a number of farms in that valley. To assist the University's administrative officers, the Department of Forestry was called in to supervise the establishment of forest plantations on the areas above the proposed flowage line. This work went on during the years 1912 to 1916. White, red, and Scotch pine and Norway spruce were planted.
After that the Varna Tract continued a useful place for field trips for forestry students. On April 26, 1941, the University Trustees formally turned the Varna Tract over to the then Cornell Arboretum, but with the special provision that the Department of Forestry should have the control of the forest plantations. This gave the Department authority it had never previously possessed. A series of systematic thinnings — long overdue — have since been undertaken, with the work done by students. The area of the plantations involved is about 125 acres.

THE ARNOT FOREST

It is axiomatic in forestry circles that no school of forestry can be considered properly equipped until it has control in fee simple of a college forest, preferable of at least 2000 acres in extent. Woodlots have their purpose, and are exceedingly useful. But students of forestry need experience and practice, as well, in tracts that are large enough to be typical of true forest conditions. In 1914, Professor Moody while scouting the countryside in south central New York came upon a forest property that answered many of the requirements of a university forest for Cornell. This was a tract of about 2000 acres, lying mostly in Schuyler County, in the Banfield Creek watershed of the Susquehanna River drainage area, some twenty miles southwest of Ithaca. It lay just over the southern boundary of Tompkins County.

The land was known as the Rodbourn Tract because some 30 to 40 years before a firm of logging contractors, the Rodbourn Lumber Company, had cut it over for hemlock and hardwoods. They had had a sawmill at Swartwood, a nearby station on the Elmira, Cortland, and Northern branch of the Lehigh Valley Railroad, where for a time they had done a considerable business. Then, expanding somewhat beyond its means, the firm had got into financial difficulties and finally lost the property through the foreclosure of a mortgage held by one of the banks in Elmira, New York.

Professor Moody’s enthusiastic account of this forest — a second-growth stand of broadleaf species — led to visits by other members of the Staff and then to excursions with classes of students. Taking the E.C. & N. train to and from Swartwood made a comfortable, all-day, round-trip from Ithaca.

The next step was to ascertain the availability of the tract for purchase. In the late autumn of 1914 Professor Hosmer and Professor Moody visited Elmira for a conference with the executors of the estate of the late Mathias H. Arnot, to whom the Chemung Canal Bank had sold the property. These gentlemen were willing enough to sell, but the University had no money. And so the matter stood for somewhat over a decade. In the meantime, however, by an understanding with the executors of the Arnot Estate, classes of students continued to visit the area and inspect the forest.

Then in 1926 an arrangement was finally effected whereby there came to Cornell University in March 1927, by gift from the heirs of the Arnot Estate, the solid block of 1639 acres of forest which the Department of Forestry had so long desired. The transfer of title to Cornell University, in fee simple, made possible the realization of long-cherished plans. The tract was given the name Arnot Forest, and plans were at once undertaken to bring it under systematic forest management. In the negotiations which eventually resulted in the gift, the Department of Forestry had the active and influential help of two gentlemen who were later trustees of Cornell, Jervis Langdon of Elmira and Frank E. Gannett of Rochester, New York. Their aid continues gratefully to be remembered.

The three major functions of the Arnot Forest were thought of as: (1) a place to supplement the instruction given in the field, especially to students of professional forestry; (2) an outdoor laboratory and forest experiment station; and (3) eventually, a demonstration forest.

The Arnot Forest was at once put to use. In the summer of 1927 Professor Spaeth established and made the initial measurements on sixteen permanent sample plots, with the purpose of obtaining exact data on the growth and yield of second-growth hardwoods.
Thanks to a gift of $5000 from Dr. Charles Lathrop Pack, to create an administration fund, a careful survey of the boundaries of the tract was undertaken. Professor Guise was appointed Director of the Arnot Forest in the spring of 1927. In the autumn, until Thanksgiving, the entire senior class of thirty men was taken each week to the Arnot Forest for a full-day of field work, in silviculture, management, and utilization. A part of the work included the felling and bucking up of the trees marked by Professor Spaeth for removal in the sample plots. This custom of autumn field work on the Arnot by members of the senior class was continued as long as the Department had students of professional forestry. In recent years, the custom of taking classes of students in farm forestry to the Arnot for practice in the forest has continued. But today transportation is by station wagon or truck rather than by train. The south end of the E.C.&N. branch of the Lehigh is, indeed, now only a memory. By automobile the Arnot Forest can be reached from Ithaca, over good roads, in less than an hour.

With the passing years additional parcels of land have been added to the Arnot Forest, until in 1942 the total size was 3765 acres, an area by the way which approximates that of the famous city forest of Zurich, Switzerland, the “Sihlwald.” In 1950 the total area of the Arnot is 4024 acres.

Practically from the start of the Arnot Forest a whole sheaf of new problems, apart from those of instruction and research, came to demand attention. To handle them it was early found wise to put one member of the Forestry Staff definitely in charge of the Arnot Forest, as Director. This position was held, in turn, by Professors Guise, Spaeth, and Recknagel, and again later, by Professor Guise.

THE SCHWARZ FORESTERS' LODGE

A gift directly for the betterment of the Arnot Forest was made in 1930 by the late G. Frederick Schwarz of Boston, a close friend of Professor Hosmer’s who gave $1000 as a start toward a fund for a headquarters building, or foresters' lodge. No developments were possible until 1935, when following the establishment of a Civilian Conservation Corps Camp (under the direction of the Forest Service) it was found that an allotment for materials and supplies to the extent of $1500 would be allowed from Federal and State Emergency Conservation Work funds. This allotment, combined with the Schwarz Fund, which with interest income had grown to $1116.75, proved adequate when unskilled labor was furnished by the C.C.C. Camp.

Built from plans drawn by a University architect, it is a substantial one-story structure near the entrance to the Forest. In exterior dimensions it is 25 by 40 feet. In plan it has one central room, 20 by 25 feet, with a stone fireplace, and four corner rooms, each approximately 10 by 12 feet in size. It is completely wired for electricity.

In April 1939, Miss Ida T. L. Schwarz of New York City, a sister of the original donor, gave to the Department of Forestry $500 “to be applied toward the upkeep of the Schwarz Lodge.” This very welcome gift permitted the installation of running water in the Lodge and so enabled the building to serve still more efficiently the purpose which its donor had in mind. It makes a convenient headquarters for the Arnot Forest. It can be used on occasion by faculty members or by graduate students engaged in research work thereon.

TOTEM POLE

The following paragraph is from Professor Guise’s report for 1933–34.

“An item of interest is the transport to the Arnot Forest of the totem pole which stood formerly at the corner of the Old Armory on the Campus. This totem pole was brought to Cornell from Alaska in 1899, at the time of the Harriman Expedition, by the late Dr. B. E. Fernow. It was removed from the Campus about ten years ago and has been in storage since then. Recently the pole was taken to the Forest and is now being repaired and repainted prior to its erection. The presence of this pole at the Arnot Forest provides another tie between the first professional school of forestry in the United States and the present Department of Forestry at Cornell.”
During the year 1931–32, Mr. John Young of Ithaca presented to Cornell University some 500 acres of forest and open land on the southeastern slope of Connecticut Hill. The lots of most value for forestry were then assigned to this Department. In the ensuing years Professor Recknagel made excellent use of these Carter Creek lands as places where he could direct his classes in field work.

**THE CORNELL FOREST IN THE ADIRONDACKS**

Because of his having served for many years as Secretary of the Empire State Forest Products Association, and also from his having acted as consulting forester of that company, Professor A. B. Recknagel had developed and maintained exceedingly close relations with the officers of Finch, Pruyn & Company of Glens Falls, New York, owners of a forest tract of more than 200,000 acres, much of it in spruce and balsam, of which the headquarters are at Newcomb, Essex County, New York.

This was of distinct advantage to the Cornell Department of Forestry, first, because it led directly to the privilege of having access to any part of those lands; and, secondly, because it resulted in the gift to Cornell University, by the Company, of a block of approximately 625 acres — Lot 56 of Township 20, Totten and Crossfield Purchase, — for research and experimental work in forestry.

For part of the summer of 1923 the Cornell Foresters were in camp, under canvas, on the Finch, Pruyn & Company tract near Newcomb. In 1927, the Company built and generously gave to the Department a commodious wooden camp, with an ample stone chimney and fireplace, for use as a mess room and study hall during the period of field instruction.

Because, even more than in the case of the Arnot Forest, one primary function of the tract at Newcomb was research, an additional statement in regard to what was accomplished there, up to and including 1937, may be found on pages 44 and 45.

**LIBRARY**

On December 26, 1911, the Trustees of Cornell University ordered “that apparatus, books, and other personal property belonging to the New York State College of Forestry at Cornell University be loaned to the College of Agriculture for the use of the Forestry Department.” It is not on record that much else remained, but the forestry library assembled by Dr. Fernow gave the new department a flying start.

Even today in few other forestry libraries in this country are to be found as complete files of the old German forestry periodicals as at Cornell. And fortunately these files had been continued — from other than forestry funds — during the interval between 1903 and 1910. With them were practically all the worth-while forestry books current in the nineties, for Dr. Fernow saw to it that the library at Cornell was well supplied. All these continue to reside under the clock tower of the University Library on the Quadrangle. They make a collection that has unique value to historically minded foresters.

Since 1911 the forestry books and magazines have been a part of the Library of the New York State College of Agriculture, which is, of course, a branch of the Cornell University Library. Prior to about 1945 many of the forestry books to which reference was most often made were kept in the Forestry Department Library in Fernow Hall, where also were recent forestry books, journals, and most of the current bulletins of the United States Forest Service and of other government bureaus.

**THREE SPECIAL COLLECTIONS**

Formerly in Fernow Hall, but later incorporated directly in the College of Agriculture Library, were three special collections bequeathed to the Department of Forestry in earlier years. One is a good part of the professional library of Clifford R. Pettis (F.E., Cornell, 1901) for almost twenty-five years Superintendent of Lands and Forests of the State of New York. Another is the personal library of G. Frederick Schwarz, the American authority on Forest Aesthetics. This collection
consists of books and other publications dealing with that and related subjects. Mr. Schwarz was the author of *Forest Trees and Forest Scenery*, (The Grafton Press, New York, 1901). The third collection is made up of certain volumes of the *Journal of Forestry*, with some other books, which belonged to Oswald D. Ingall (A.B., Cornell, 1907). Each collection is marked by a special book plate carrying the name of the donor.

**GIFTS FROM CHARLES LATHROP PACK**

Four times in its history the Cornell Department of Forestry was the recipient of benefactions from the late Dr. Charles Lathrop Pack of Lakewood, New Jersey, President of the American Tree Association. Two were gifts made in connection with its teaching; the third a contribution of $5000 to aid the Department to organize the Arnot Forest for efficient administration; the fourth the endowment of a research professorship in forest soils in Cornell University. This latter important gift is described on page 49. All came to Cornell University because of Dr. Pack’s interest in forestry.

Dr. Pack’s first gift was made at the dedication of the Forestry building at Cornell in May 1914, when he handed a check for $500 to Professor Mulford, “to be used in whatever way the Forestry Staff shall see fit.” By decision of the Staff this money was turned over to the University Treasurer for investment, the interest to be used for an award each year to the member of the senior class of students of professional forestry who held “the best all around record in his studies, his work in the field, and his general attitude.” Except for one year, this prize was awarded annually for 1923 to 1936, with one earlier award in 1918. The income accumulating from this fund during the World War I years was used in part toward the Irish-Tinkham memorial tablet in the Club Room.

**Winners of the Charles Lathrop Pack Forestry Prize**

(All seniors, Department of Forestry)

1918 Samuel C. Sweeny
1919 to 1922 Interest used in other ways
1923 Alfred P. Jahn
1924 James E. Davis
David B. Cook
1925 Bernard Frank
Neale R. Hamilton
1926 No award made
1927 William Y. Naill
1928 Charles A. Abell
Andrew G. Sharp
1929 Marvin L. Smith
George W. Hedden
1930 James W. Cruikshank
1931 Lowell Besley
1932 William L. Chapel, Jr.
George Parsons
1933 Michel Afanasieff
Abraham George, Jr.
1934 Max Dercum
John W. Duffield
1935 Emil F. Meyer
Edward J. Whalen
1936 Robert A. Van Order

The interest rate of the combined Cornell University investments up to 1930 averaged more than 5 per cent — for many years 5.4. In 1924, Dr. Pack doubled the original fund, bringing it to a total of $1000. Since 1937, with the approval of the University Trustees, the income from the Charles Lathrop Pack Fund has been used for special departmental needs, as determined from time to time by the Forestry Staff.

The Charles Lathrop Pack Foundation Forestry Prize was established in 1924. From another fund of $1000 the income is awarded annually for an essay on some forestry topic which, in the words of the donor, “will arouse in the public an interest in forestry and an appreciation of what forestry means to the country, and so be of service in furthering the forestry idea.” The award is made by a faculty committee appointed each year by the President of the University.

Formerly this contest was open only to students of professional forestry. Since 1937 any
student enrolled in any forestry course offered by the Department of Forestry (or since 1948 by the Department of Conservation) in a given year may submit an essay. High standards are demanded. The award is sometimes withheld. But during the years since 1924 (to 1950) this prize has been awarded twenty-four times. Many of these essays have real merit. Some of them have been published. All those awarded the prize are on deposit in the Cornell University Library.

CHAPTER 6
THE STUDENT BODY AND ALUMNI

As has already been explained the undergraduate instruction given by the Cornell Department of Forestry consisted up to June 1936 of two main parts: (1) the announced program of technical courses designed for students of professional forestry, and (2) courses of more general character, intended for students of other departments of the College of Agriculture and of other colleges of the University.

STUDENTS OF PROFESSIONAL FORESTRY

In the early years of the Department any student who registered in forestry courses to a number carrying an aggregate of fifteen credit hours was considered a “regular” student of forestry. Later only those who were definitely enrolled and accepted by the Department, under its four-year program of technical and other courses, were admitted to that standing. During the period when the Department of Forestry was functioning normally, after the first world war and prior to 1933, the number of “regular” students in residence each year ranged from 100 to 125. Classes starting with thirty or more freshmen diminished in size for various reasons. The senior classes averaged about twenty men each.

In that tuition in the College of Agriculture at Cornell University is free to bona fide residents of New York State, it was not surprising that a majority of Cornell foresters were New Yorkers. But over the years numerous other States were represented in the list of alumni. Especially is this true of those who came to Cornell from other schools of forestry as candidates for the degree of Master in Forestry and, in a few cases, the degree of Doctor of Philosophy.

All the members of the Cornell Forestry faculty were frankly of the opinion that for the average student four years is not enough time to obtain adequate training for the practice of forestry as a profession. Consequently, they did all they could to encourage those students whose work indicated capacity for graduate study to go on as candidates for the degree of Master in (or of) Forestry, either at Cornell or at one of the other American schools that offer advanced degrees in forestry.

The number electing graduate work in forestry at Cornell averaged from four to eight a year. Occasionally, men with a degree of Bachelor of Science returned after a few years to work for the degree of Master in Forestry. Such students were always especially welcome, for having had experience they knew clearly what they wanted and were ready to work hard to make up their known deficiencies. The proportion of those who so returned was, however, not much more than one in twenty.

The chief stumbling block to many students who had the ability for graduate work was the cost of another year at college. No scholarships or fellowships were available for students of forestry at Cornell. The only financial help which the Department could give was in the salaries of four, later three, part-time assistantships carry-
ing stipends of $750 and $500 for the nine months' college year. These positions were filled by the Dean of the College upon recommendation of the Forestry Staff. The field of candidates included graduates of other schools of forestry that have undergraduate courses, as well as those who as seniors at Cornell had just received the degree of Bachelor of Science. The original copies of the theses of all the Masters in Forestry were filed by the Graduate School in the University Library.

**ALUMNI STATISTICS**

As Secretary of the Forestry Staff, Professor Guise kept careful statistical records of the student body. The following table gives the totals of graduate and undergraduate students corrected to include all those who received forestry degrees prior to the close of professional instruction in forestry at Cornell. These 378 men are to be recognized as the true “Cornell Foresters” of the Department, younger brothers of those who have been listed earlier in this history as the original “Cornell Foresters.”

Degrees conferred by Cornell University, from 1910–11 to 1936–37 inclusive, on those who had satisfactorily completed the work in professional forestry leading to those degrees:

- Bachelor of Science ............... 351
- Master in (or of) Forestry .......... 86
- Doctor of Philosophy .............. 3
- Other degrees given by Cornell to foresters for special reasons ........ 8

Total: 448

Less duplication (those receiving more than one forestry degree from Cornell) .......................... 70

Actual total ............ 378

In this statement no attempt is made to evaluate the 378 men who constitute the alumni of the Cornell Department of Forestry. That an impressive body of accomplishment stands to the credit of this considerable group of foresters is self evident. Enough here to say that a goodly share of them have advanced to positions of true responsibility—in the Federal Government, in the forestry departments of a number of the States, and in private corporations and companies. The records compiled by Professor Guise show that of those who received the degree of Master in Forestry from Cornell from 1911 to 1937, seventy-two per cent had remained in forestry, — a figure which compares favorably with similar information from the technical schools of other professions.

**ALUMNI ASSOCIATION**

That the cordial and intimate relations between former students and faculty of the Cornell Department of Forestry had indeed a secure foundation is evidenced by the continued activity of the Alumni Association of Cornell Foresters, although nearly fifteen years have passed since the suspension of instruction in professional forestry at Cornell. A quarterly news letter — *The Cornell Forester* — has been discontinued. For many years its editor was James D. (“Froggy”) Pond, who certainly had the knack of putting together news items that kept all the alumni in touch with their classmates.

**ALUMNI LETTERS TO PROFESSOR HOSMER**

Although essentially a personal matter, it seems to the author only right that mention should be made in this review of a most delightful tribute paid to him by a very considerable number of his former students at the time of his retirement from active duty, at the end of June 1942. At a gathering of all those then connected with the Department of Forestry, held at the home of Professor and Mrs. Cope, in July 1942, there was presented to Professor Hosmer a beautifully bound volume containing more than 100 letters from his former students. Each brought to him greetings and felicitations on his advancement to the status of Professor of Forestry Emeritus.

To be the recipient of a volume of such letters as these is an experience which moves one deeply. The outspoken character of the letters leaves no
doubt whatsoever of the utter sincerity of the writers. One so honored can only say that he is indeed most truly grateful that words and acts of his — for the most part long forgotten — proved of help and encouragement to younger foresters, and aided them to find their places in their chosen profession. This thought he tried to express to each man, in personal letters written during the months of July and August 1942. He again records his sincere and heartfelt appreciation of all these gracious expressions from these many friends.

THE CORNELL FORESTRY CLUB

Because the Cornell Forestry Club was associated with the years when the Department consisted mainly of students of professional forestry, a note in regard to it follows.

The spirit of comradeship which knit the Forestry Staff at Cornell into a working team, extended also to the relations between faculty and students. Forestry field work makes for intimate acquaintance with the other man. Still more does life in camp. There it does not take long to “size up” any individual, and this whether his tent is in faculty row or down the line. The Cornell foresters — both faculty and students — early got to know one another well. Out of this developed a happy atmosphere of frankness and informality, which nevertheless, on the part of the students, was marked by respect. That the relations were cordial, there was no question. And that this engendered loyalty to the school and to the university is definitely a matter of record.

One function of the Forestry Club was the publication of an Annual of from forty to sixty pages. The first of these was issued in 1920; others from 1922 to 1926. Well illustrated, with articles by students, alumni, and faculty, the *Cornell Forester* served its purpose well and compared favorably with like publications from other schools of forestry. Sets may be found in the University Library and in the Library of the College of Agriculture.

The Club Room in Fernow Hall, with its capacious fireplace, witnessed many occasions that it is a pleasure now to recall. These ran all the way from evenings of extreme hilarity to gatherings that were marked by seriousness, if not dignity.

THE TINKHAM UNIT

One of the latter was the evening in the spring of 1917 when Edward I. Tinkham (Cornell 1916) opened the campaign to enlist men for the Cornell Ambulance Corps which a few weeks later he was to lead to France. Tinkham had already been in France, driving an ambulance. He had been awarded the *Croix de Guerre* for bringing out wounded men under fire.

No one who saw and heard Tinkham that evening can ever forget that occasion. Standing tall and straight in his uniform, with his decoration flashing in the firelight, a true Sir Galahad, Tinkham made his appeal for ambulance drivers, modestly but with compelling persuasiveness. The unit was quickly filled and soon was on its way.

While the unit was on the ocean the United States declared war. So it came about that the first organized body of Americans to carry our flag ashore in France and to the front was the Cornell unit, under Edward Tinkham.

After World War I the faculty, alumni, and students of the Department of Forestry dedicated to Eugene Jennings Irish (1913) and Edward Ilsley Tinkham (1916) a bronze tablet over the fireplace in the Club Room. It was unveiled December 7, 1922; a fitting memorial to the two Cornell foresters who fell in the service of their country in World War I.

Irish was last seen leading his company of infantry into action somewhere in France. Tinkham, who had transferred to the Air Service, died from pneumonia contracted while on airplane patrol, in Italy, after the Armistice.

On May 24, 1942, at Commencement time, a special memorial service was held at the Cornell War Memorial in tribute to Cornell’s War Dead, and particularly “to the Tinkham Unit, which on May 24, 1917, carried the first American Flag into action in the World War.”
In World War I the majority of the upperclassmen of the Department volunteered for service, as did some of the, then, relatively few alumni. Notes as to the World War I service of Cornellians are given in *Military Records of Cornell University in the World War*, published (at Ithaca, 1930) by the University under the editorial supervision of the late Professor Martin W. Sampson. In the chapter *The Roll of the Fallen*, are comprehensive statements concerning Eugene J. Irish (1913) (pages 62 and 63), who was killed at Haumont, France, in the Saint Mihiel offensive, on September 16, 1918; and Edward I. Tinkham (1916) (pages 122 to 124), who died March 30, 1919 from an illness contracted in service in the air. It is evident that this latter obituary was personally prepared by Professor Sampson. It repeats, with exactness, the story of how Tinkham led the first group from the United States officially to carry our flag in France in 1917.

The Records of Cornellians who served in World War II are not yet available in 1950.

CHAPTER 7

**EXTENSION IN FORESTRY**

**EVERYONE** who knows Cornell is aware that Extension is one of the three major functions of the New York State College of Agriculture. The Department of Forestry has always had an intensive Extension program. This chapter on Extension in Forestry makes no claim whatsoever to being a complete account of all that has been accomplished in Extension forestry at Cornell. Its purpose is briefly to chronicle certain high spots that characterized the program under its several leaders, especially during the 26-year period from 1924 to 1950 in which it was under the guidance of Joshua A. Cope, Extension Forester of the New York State College of Agriculture. A detailed record in the yearly reports is filed in the office of Director of Extension, L. R. Simons, Roberts Hall.

**BACKGROUND**

Extension in Forestry began at Cornell at an auspicious time. One of the most active of the early leaders in agricultural Extension, the New York State College of Agriculture had by 1910 the ground well broken and the first foundations securely laid. The time was ripe to undertake Extension work of this sort in forestry and it fitted exactly Dean Liberty Hyde Bailey’s ideas of what was needed.

In another way, also, Cornell got off to a good start in forestry Extension, through a happy understanding with the State Forester, a situation that was far from common in many other States. How and why the situation in New York was as it was requires, first, that one goes back a way into history.

In a sense Extension work in forestry began when Gifford Pinchot, Chief of the then Division of Forestry of the United States Department of Agriculture, issued Circular 21 of the Division, in the autumn of 1898. This was an offer of advice and assistance to owners of timberland. It applied to areas all the way from 5-acre farm woodlots to great commercial holdings of forest lands and to large tracts of state forests.

For the next seven years the making of what were termed “forest working plans” was a major part of the work of the Federal Division, later Bureau, of Forestry. Then after 1905, when the first thought of the men of the Forest Service was directed to the administration of the National Forests, assistance to private owners was increasingly turned over by the Forest Service to the State Foresters; for by that time many of the
States had such officials. Many of these foresters welcomed the opportunity to give advice to farm woodland owners.

Here in New York, however, the Superintendent of State Forests from 1910 to 1927, Clifford R. Pettis, was more interested in developing forest planting than in farm forestry. Likewise, his hands were full in caring for the state forest lands, in perfecting the state's forest-fire-control system, and, later, in building up the New York State Forest Preserve through extensive purchases. For these reasons Pettis was more than ready to turn over requests for Extension work to the forest schools, and to Cornell in particular those requests concerned with forests on farms. This policy was, in general, continued by his successor, William G. Howard.

**THE START OF FORESTRY EXTENSION WORK**

Instruction in the new Department of Forestry began in the autumn of 1911 with courses of a non-professional character to meet the needs of students of general agriculture. Along with it also began Extension work.

The first appointee was John Bentley, Jr., who took office on January 1, 1912, as has already been noted. On October 1, 1913, Frank B. Moody was appointed full professor and given direction of, and to a considerable extent responsibility for, the Extension functions of the Department. Mr. Moody had been graduated in forestry from the University of Michigan in 1906 and before coming to Cornell had served in forestry in Wisconsin.

The departmental report for 1913–14 has these notes under Extension. “One half of the time of one professor was devoted to the following work. Fifteen examinations of forest lands, with a total of 836 acres, were made for woodlot owners in various parts of the State, and written recommendations for the management of those lands were sent to the owners. Nineteen other trips were made, mostly for addressing meetings. A cooperative arrangement was made with the City of Cortland for watershed planting. The work has been started. An extensive program was given during Farmers’ Week. An exhibit was placed at the State Fair.”

In the summer of 1914 a special study of the woodlands in Broome and Dutchess Counties was made by Professors Moody and Bentley. This later resulted in two Cornell Experiment Station Bulletins, 366 and 368. The year 1914–15 saw an increase in the number of woodlots examined, to 26, aggregating 930 acres. The cost of travel and subsistence of the agent sent was, at that time, borne by the owners.

Professor Moody was well endowed with practical common sense. He knew how to meet people and interest them in farm forestry. He was building a helpful program. Then, on September 30, 1915, he resigned to become Forest Commissioner of Wisconsin. There he was active for the next few years. Professor Moody died in 1918, from an illness contracted while in military service, in a United States Army Camp. His passing was a real loss to the Profession of Forestry.

During the year 1915–16 the work in Extension was carried on by Professor Bentley and by Cedric H. Guise, who was appointed Extension Instructor on October 1, 1915.

**COLLINGWOOD SUCCEEDS MOODY**

To succeed Professor Moody, George Harris Collingwood was appointed on July 1, 1916, Extension Assistant Professor. An alumnus of Michigan State College, B.S. 1911, he received the degree of Master of Arts from the University of Michigan in 1917. In 1913–14 he took advanced work in forestry at the University of Munich, Germany. The war prevented his obtaining a doctorate. From 1911 to 1913 and in 1915–16 he served in the United Forest Service, part of the time as a Forest Assistant in the Southwest.

In Extension work, Professor Collingwood put more emphasis on the establishment of demonstration areas and less on lectures before granges, farmers’ institutes, and other meetings. The ideal plan was to have at least one well-managed demonstration woodlot in each forest land county in the State. Close and cordial contacts were de-
veloped and maintained with the local county agents. In these years Course 1, The Farm Woodlot, and also the short winter course in forestry, were handled by the members of the Extension branch of the Department of Forestry.

During the war years 1917 and 1918, Professor Collingwood, aided by other members of the Forestry Staff, devoted no little time to the wartime wood-fuel campaign, in cooperation with the State Advisory Committee on Wood Fuel, appointed by the Conservation Commissioner at the direction of the Governor. Various devices were used to bring home to the public the desirability, where possible, of burning wood as fuel, to save coal for the use of the armed forces of the Nation.

Following the armistice in November 1918, and the return of Mr. Guise from war work in January 1919, the Extension activities returned to their normal course. By now, however, problems of marketing woodland products were more and more demanding attention. Also in the year 1918–19 began the active encouragement by the Department of the manufacture by farmers of maple sirup and sugar. Because of increased demands in teaching, Mr. Guise was forced to give less time to Extension. Consequently, from 1920 to 1923, the brunt of the work fell on Professor Collingwood. These years were marked by the development of the maple-sugar industry in New York, particularly through cooperative efforts fostered by the Cornell Department of Forestry.

The Department of Forestry again heartily cooperated with the Conservation Commission in its reforestation campaign. Several members of its staff took active personal part in forest-planting demonstrations in sixteen counties of the State.

During the college year 1923–24, Professor Collingwood was on sabbatic leave, in the employ of the States Relations Service of the United States Department of Agriculture, to help devise a program of closer cooperation between the state foresters and the Extension Service in Extension work in forestry. This fitted in closely with certain of the authorizations contained in the Clarke-McNary Act, passed by Congress in June 1924. Because of a demand for his services in Washington, with an increase in salary which this College could not meet, Professor Collingwood resigned on June 30, 1924.

It was with real regret that the members of the Forestry Staff saw Professor Collingwood leave the Department. It was their judgment that in his period of service he had done notable work, the influence of which had made itself felt well beyond the borders of New York State. As a colleague and a friend he had made a large place for himself in Cornell circles. As Extension Forester in this Department his contributions were significant.

During the year 1923–24, the Extension activities of the Department were once more carried on by Professor Bentley, on a part-time basis, assisted by Mr. Francis E. Cobb (B.S., Minnesota, 1916), a graduate student, who was appointed Extension Instructor for that period. Mr. Cobb had had considerable experience in tree planting on the plains—in shelterbelt work at the station at Mandan, North Dakota—so he fitted well into the reforestation campaign then at its height in New York State. Following graduation from Cornell with the degree Master in Forestry, in 1925, Mr. Cobb returned to Bottineau, North Dakota, where he became President of the School of Forestry. Later, and up to 1941, he was State Director of the Prairie States Forestry Project at Jamestown, North Dakota.
A NEW CHAPTER

THE APPOINTMENT OF JOSHUA A. COPE

The autumn of 1924 opened a new chapter in Forestry Extension at Cornell. On October 1, Joshua Alban Cope became Extension Assistant Professor of Forestry; the beginning of a long period of service which gave him for some years the distinction of being the senior State Extension Forester in the United States. Professor Cope held the degrees of Bachelor of Science from Haverford in 1912 and Master of Forestry from Yale in 1914. He was a member of Phi Beta Kappa and of Phi Kappa Phi. Before coming to Cornell he had had a variety of experience in forestry. He was in the United States Forest Service in the West from 1914 to 1916 and with the State of Maryland, as Assistant State Forester in Charge of Forest Fire Control, from 1917 to 1924.

Taking full advantage of the start already made by his predecessors, Professor Cope broadened the field and by novel methods of attack made Extension work in forestry take on broad relationships and new meanings.

Obviously, the immediate thing for Professor Cope to do was to continue to cooperate with the Conservation Commission in the forest-planting campaign and in the fight to control the white-pine blister rust. During his first year at Cornell he also had an active part on a forestry demonstration train which made a satisfactory trip across the Southern tier of counties, making stops at all the stations on the Erie Railroad. In a similar way, some years before, Professor Moody had helped with a train on the New York, Ontario and Western Railroad. This was an Extension approach which at that time was being used to good effect in Canada.

CLARKE-McNARY AID

A real step forward occurred in the year 1925–26 when an allotment of Federal money was made to the Department of Forestry under the authorization of the Clarke-McNary Act of June 1924. This permitted the addition to the staff of an Extension assistantship, and the employment of clerical help. Two graduate students held this assistantship during that winter; first, James E. Davis (B.S., 1924; M.F., 1926; Cornell) then Daniel Den Uyl (B.S., Michigan State, 1922; M.F., Cornell, 1926). One useful accomplishment of the year was an inspection of the forest plantations established under the general direction of the Department during the years immediately preceding.

Significant that year was the expansion of the junior-project work in forestry, by getting local sportsmen’s clubs to finance reforestation projects in a manner similar to that followed by many local banks in supporting the junior projects with field crops. This was done in cooperation with Farm Bureau county club leaders. Town and county forests were likewise fostered, as well as planting by troops of Boy Scouts and Girl Scouts.

Another help to farmers and other land owners who wanted to plant areas of forest was the plan, worked out by Professor Cope, whereby the tree orders were assembled in early winter by the county agents, brought to the Department of Forestry at the College of Agriculture, and transmitted to the Conservation Commission.

At Farmers’ Week in February 1926 a custom was inaugurated which has been observed in various years since; namely, an exhibit in cooperation with the Division of Lands and Forests of the (now) State Conservation Department. In 1926, the general theme was “King White Pine.”

Notwithstanding the stress continually put on reforestation, Professor Cope began in these years also to emphasize that the proper care of existing woodlands was of still more moment than forest planting. To this end he established more and more demonstration areas, illustrative of how to improve farm woodlands through the application of the right sorts of forestry practices. In this Professor Cope worked always in the closest cooperation with the county agents and the local Farm Bureau forestry committees. Such team play has been, indeed, one of the characteristic features of Extension forestry at Cornell under Professor Cope’s direction.
Another line of work which began to loom large in 1927, and has increased in importance ever since, is forestry for 4-H Club boys and girls. The outstanding effort in forestry Extension in 1928–29 was to strengthen the state-wide program by organizing forestry Farm Bureaus committees in the various wooded counties. About this time forestry tours, conducted under the direction of the Extension Forester, became an annual function. Tours to points of forest interest in the eastern and in the western parts of the State normally alternated by years. Every autumn a tour to the Adirondacks, especially for those enrolled in the 4-H Club forestry projects, was looked forward to by a large group of young people.

It was in connection with one of these tours that Professor Cope first made use of "the sawdust trail," a convenient way to indicate clearly which turn to take along a highway, by having the first car drop a line of sawdust around the corner as it made the turn.

On August 1, 1929, James E. Davis returned to Cornell as Extension Instructor in Forestry. He was put in charge of all the 4-H Club work in forestry conducted by the Department. The authorization of this change from a part-time assistantship to a full-time instructorship brought encouragement to the Forestry Staff. It was regarded as a real step forward in the history of the Department.

The year 1930 also saw the inauguration of Extension talks by foresters over the Cornell University Radio Station WHCU. Each Friday noon, from October to June, inclusive, some member of the Forestry Staff appeared for an original, ten-minute talk on some topic of direct interest to New York State forest land owners. Some of these talks were re-broadcast from other stations. Many of them were briefed in news releases to daily and weekly newspapers. It is difficult to estimate how many listeners heard these forestry speakers, but from 1930 to 1942 — the period of this narrative — each of the foresters on the Department of Forestry Staff at Cornell faithfully did his part to carry on this sort of forestry Extension work.

Because of a critical situation in the maple-sirup industry which suddenly developed in the spring of 1932, the Extension Forester endeavored to assist the maple producers to find new markets and to help them develop better methods of production. This project expanded rapidly during the next two years, through a series of meetings held in various maple-sirup producing counties in the State. It made available standard maple-sirup grades. It led to a full discussion of the advantages of using glass rather than tin containers for maple sirup. By 1936 maple products schools had become a regular feature of the Extension program. The departmental bulletin on maple sirup and sugar has been revised and republished several times. It is now Extension Bulletin 397.

In October 1935 James E. Davis resigned as Extension Instructor to accept the position of Extension Forester for Illinois. This vacancy was at once filled by the appointment of James Dunbar Pond (B.S., 1928; M.F., 1934; Cornell) who was then serving in the Department of Forestry as a teaching instructor. He had had experience in boys’ club work before returning to the University. Mr. Pond took over the 4-H Club work and also the direction of the teachers of vocational agriculture who handle forestry projects. He acted in various ways as understudy to Professor Cope and proved himself a capable man in forestry Extension.

In 1942, Mr. Pond reported that the 4-H plantings — then extending over seventeen years — "brings the grand total to 17,001,000 trees, and that the total for vocational agriculture students since 1933 is 4,457,000 trees more." No one can deny that New York is a tree-planting State.
WOODLOT DEMONSTRATIONS

The value of the areas established to demonstrate proper woodland management increases as the years go by. Work on many of them has been under way long enough so that comparisons can be made to real advantage. Consequently so-called “anniversary meetings” are held on plots that have been under management for five or more years. In 1934-35, twenty-four such meetings were held, with good attendance of interested land owners. In 1940-41, an all-time high to that time was recorded in the number of meetings held at these demonstration plots, when 800 interested woodland owners were reached in a total of 51 meetings.

SPECIAL STUDIES

An Extension study with a distinctly practical application was made by the Extension Forester in 1938, as a member of a committee of the New York Section of the Society of American Foresters. This study was a critical comparison of the log scales most used in New York, — the Doyle Rule and the International Log Rule. Both were shown to be unsatisfactory from the seller’s and the buyer’s standpoint. Instead, the committee recommended the use of the Scribner Log Rule for most transactions involving the buying and selling of logs in New York State.

Another project of direct help to farmers was the trial of water-soluble chemicals for the preservative treatment of fence posts. In 1941, field demonstrations were held in six counties and at Farm and Home Week.

TIoga Woodland Owners’ Cooperative

The key to the sound harvesting of forest crops is control of the cutting. This is best achieved by marking the trees to be cut. The Extension foresters have, therefore, fostered the organization of groups of farm woodland owners into associations for the express purpose of harvesting their woodlands under planned management. An association, because of its volume output, can make better terms with buyers of logs than can individuals selling separately.

A particular case in point was the Tioga Woodland Owners’ Cooperative, with headquarters in Owego, New York. This Association was incorporated on January 1, 1939, after three years of effort on the part of the Extension foresters at Cornell. That there is general interest in group organization as an aid to farm woodland management is indicated by the request that came to Extension Forester Cope to prepare an address on Woodland Owners’ Cooperatives for the important fortieth annual meeting of the Society of American Foresters, held in Washington, D. C. in December 1940.

EXTENSION WORK CONTINUED

The reorganization of the Department of Forestry — in the limelight during the years 1936 and 1937 — fortunately did not alter or interfere with the work in Extension. One of the specific recommendations of the report by Dr. H. H. Horner was that Extension work in forestry at Cornell should go on without change or curtailment.

This was further emphasized when on July 1, 1937, Extension Forester Cope was advanced to the rank of full professor, a promotion well deserved because of the years of highly creditable service that he had given to developing forestry Extension in the College of Agriculture.

As is noted in Chapter 11, not only did the Extension activities in forestry continue in the years between 1937 and 1948 but they were further developed. Extension in forestry was thus one of the initial parts of the Department of Conservation in 1948.

During the spring months of 1942 Professor Cope was on sabbatic leave, engaged in a study, under the auspices of the Charles Lathrop Pack Forestry Foundation, of the various methods of applying farm forestry. The trip took him into practically all the States of the Union east of the Mississippi River, and included conferences with “countless farmers, agricultural workers and foresters.” A 38-page brochure was published and distributed by the Pack Forestry Foundation,

During Professor Cope’s absence, Warren W. Clingan (B.S.F., Penn State, 1933) acted as Assistant Extension Forester from February 1 to August 15, 1942. Twice before, in earlier years, other foresters had held temporary appointments as Extension Instructor: James D. Kennedy (B.S., Purdue), loaned by the New York State Conservation Department, from February 15 to June 15, 1928; and Gilbert E. Brown (B.S., Purdue, 1936; M.F., Yale, 1939) from February to June, 1940.

Another distinctive contribution to farm forestry—this time international in its significance—was made by Professor Cope during his next period of sabbatic leave. In 1949, on behalf of the American Friends Service Committee, he visited Finland to aid, in an advisory capacity, in the program of the Finnish Government to resettle on lands in the central and south parts of that country the farmers of Karelia who were dispossessed in the war with Russia in 1944.

Suddenly, from heart failure, death came to Joshua Cope at the height of his career, on August 26, 1950. A man of outstanding personality, he made farm forestry a subject of vital meaning to hundreds of woodland owners.

EXTENSION PUBLICATIONS

For purposes of record the following list is inserted here to enumerate certain publications of the Department of Forestry which are not mentioned elsewhere in the text. As with the other bulletins cited, file copies may be found in the Cornell Libraries.

FARM READING COURSE LESSONS

In the early days of the Department, and until about 1920, Reading-Course Lessons for the Farm played an important role at Cornell. It was only natural, therefore, that the first contributions from this new Department should take this form, and that they should bear the sub-heading Farm Forestry Series, as follows:


EXTENSION BULLETINS

The bulletins in this series, contributed by various members of the Department, cover a range of farm-forestry topics.

49 Estimating the Value of Timber in the Farm Woodlot. By John Bentley, Jr. April 1922. (Revised edition of Farm Reading Course Lesson 62; Bulletin 49 reprinted in 1923 and 1926, then replaced by Bulletin 232.)
167 The Production of Maple Sirup and Sugar in New York State. By G. H. Collingwood, J. A. Cope, and M. P. Rasmussen. February 1928. (Revised in 1932 and 1935, then replaced by Bulletin 397.)
in 1938, revised in 1941, then replaced in 1948 by Bulletin 722.)


495 Fuelwood from Farm Woodlots. By A. B. Recknagel and J. D. Pond. April 1942. (Reprinted 1942.)


An unnumbered four-page leaflet, The Burning Question, by James E. Davis, distributed in 1933 as part of the emergency fuel-wood campaign of that year, ranks as a circular.

**JUNIOR EXTENSION BULLETINS**

The bulletins in this series (now called 4-H Club Bulletins), issued by the Department of Forestry, were to provide material for the 4-H Club members, boys and girls, who enrolled in the 4-H Forestry program.

26 Fifty Common Trees. Forestry for 4-H Club Boys and Girls—Second Year. Forest appreciation. By J. A. Cope and Gardiner Bump. December 1927. (Revised 1929; reprinted 1935; revised 1940 and 1944, then reprinted as 4-H Club Bulletin 85 in 1948.)


85 Know Your Trees. By J. A. Cope and Fred E. Winch, Jr. 1949. (A revision of Bulletin 26.)


CHAPTER 8

RESEARCH

SUCCESS in the practice of forestry depends first of all on the skillful application of certain silvicultural principles. These rest on a body of knowledge which is the result of scientific investigation and research. To help build up and enlarge this store of knowledge should be an essential part of the program of every school of forestry. This has always been clearly recognized at Cornell. It fits exactly into the three-fold purpose of the New York State College of Agriculture.

It is therefore appropriate that a chapter of this history should tell how the Department of Forestry carried on its research program. Its intent is to indicate the character and scope of its investigations; to note when and where they were undertaken; and to mention the members of the Staff most concerned with the work. For detailed information, the file of the forestry projects—from 1920 to 1937—may be consulted in the office of the Director of Research in Roberts Hall, Dr. C. E. F. Gutenman. It should be understood that before being actually started all these projects had received the prior approval of Dr. Gutenman.

It was always the unwritten understanding in the Cornell Department of Forestry that opportunity be afforded to each one of the several members of the teaching staff, and so far as practicable to those of the Extension Staff as well, to carry on research in addition to his regular duties in classroom, field, or laboratory. Each member of the Forestry Staff was therefore a contributor to the general program.

RESEARCH PROFESSORS

As has already been noted (page 20) the transfer of Professor Willard Winfield Rowlee to the Department of Forestry on July 1, 1922, as Professor of Dendrology, was felt to be a notable strengthening of the Staff. But illness overtook him, which led to his death on August 8, 1923; a great loss to all his friends, to the Department, and to the University.

After careful deliberation over several possibilities, the choice as to Professor Rowlee’s successor fell on J. Nelson Spaeth (B.S., Cornell, 1919; M.F., Harvard, 1920), who for four years had been Assistant to the Director at the Harvard Forest in Petersham, Massachusetts. He took office October 1, 1924, as Research Assistant Professor of Forestry. Until June 30, 1938, when Professor Spaeth resigned to become Professor and Head of the Department of Forestry at the University of Illinois, he was an active and valued member of the Department.

With the coming of Professor Spaeth, research in forestry at Cornell entered a new phase. For although at various times he helped in teaching—in the absence of colleagues on sabbatic leave, or during the time when the Department was undergoing reorganization, from 1933 to 1936—Professor Spaeth was the member of the staff particularly charged with research. It is for this reason that so many of the projects carried his name as Leader, and that he bore the title Silviculturist of the Experiment Station. During a year of sabbatic leave, in 1931–32, Professor Spaeth obtained the degree Doctor of Philosophy from Yale University; conferred in June 1932.

PROJECTS UNDER PROFESSOR SPAETh

Emphasizing what had always been the major research interest of this Department, Professor Spaeth specialized first in studies of the growth and yield of second-growth broadleaf trees and, second, in investigations to discover practicable methods of hastening the germination of the seed of certain species of forest trees. Both came under the first research objective of the Department of Forestry.

One of Professor Spaeth’s first large projects was an interesting example of a study based on the comparison of measurements of a forest stand. This was in the summer of 1925 when, at Hyde
Park, New York, sample plots established in 1905 by the United States Forest Service were re-measured and analyzed. This study was unusual, in that complete records of the original conditions and of all subsequent operations were available. The owner, Colonel Archibald Rogers, had faithfully followed all the recommendations of the original Forest Service working plan. The results of this resurvey were published in 1928 as Bulletin 465 of the College, with the title *Twenty Years' Growth of a Sprout Hardwood Forest in New York.*

**OTHER RESEARCH WORKERS**

From October 1918 to June 1920, Bernard A. Chandler (M.F., Yale, 1911), former assistant State Forester of Vermont, acted as Assistant Professor of Forest Utilization. His duties were mainly in connection with research.

As part-time Research Instructor, Harold G. Wilm, (B.S., Colorado College, 1929; M.F., 1930, Ph.D., 1932, Cornell) served for the year 1931–32, in the absence of Professor Spaeth who was on leave.

Although his work was in forest research, the appointment of Dr. Ellis Flower Wallihan as Research Assistant Professor is noted in the final chapter, in that it was in the college year 1938–39.

**THE ARNOT FOREST**

The spring of the year 1927 witnessed the fruition of what for thirteen years had been the hope of the Department of Forestry—the formal turning over to the University of the Arnot Forest, then a tract of 1639 acres, situated twenty miles southwest of Ithaca, within an hour’s drive by automobile from Fernow Hall.

Part of this story has already been told under Educational Equipment (pages 27 and 28). But, specifically as regards research, it should be said here that the addition of this college forest advanced the already good standing of the Cornell Department of Forestry in a way that nothing else could have done. It added what is rightly regarded as an essential unit in the basic equipment of any school of forestry.

The year 1927 was therefore, in more ways than one, a turning point in the history of forest research at Cornell. It gave the foresters confidence to know that, at last, long-time projects under true forest conditions could be started with the assurance that, so far as the site was concerned, they could be carried through to completion without change or interference.

Two gifts of $5000 each to aid the Department in its development and use of the Arnot Forest as a field laboratory came to the Department of Forestry in 1926 and in 1930. The first was from Dr. Charles Lathrop Pack. Most of it was used for an accurate survey of the Arnot Forest and for necessary outlays in bringing that tract under administration. The other was from Dr. Archer M. Huntington of New York City. It was given specifically to aid in carrying on research on the Arnot Forest. Part of this gift, however, could be and was used as a revolving fund for financing other work on the Forest, repayable through the sale later of small lots of timber. These gifts were not in the nature of endowments but, rather, special contributions to research.

**RESEARCH OBJECTIVES**

The research and investigations conducted by the Department of Forestry may be grouped broadly under four main heads:

I. *Ecological studies* concerning forest trees that are of commercial importance in New York State:

1. Second-growth broadleaf species in the south-central part of the State.
2. Spruce, balsam fir, birch, maple, and beech in the Adirondacks.
3. Studies of special areas; of promising introduced species; or of particular silvical problems.
4. Projects in fields outside the realm of biology, which from other angles bear on the progress of forestry.

II. Study of *problems of an historic or economic nature,* which have to do with land use,
forest history, forest policy, forest management, marketing of forest products, and kindred subjects.

III. Special research projects in field and/or laboratory to discover truth new to science.

IV. Cooperation with other Research Agencies in research and investigation, both within the New York State College of Agriculture and with other organizations.

DISCUSSION

It is not needful to enumerate all the different projects laid out by the Department. Rather, there are here presented notes which are illustrative of various parts of the considerable body of research done by various members of the Staff. Many of the results were published. In others, the repeated re-measurements of sample plots constituted portions of long-continued experiments. In work of this sort, as in many series of sample plots on the Arnot Forest, the sudden end of the research of the Department of Forestry, in June 1937, necessarily precluded publication. In the paragraphs that follow mention is made of research publications written by members of the Department of Forestry.

Ecological studies

Ecological studies of the second-growth broad-leaf trees of south central New York ranked first and had chief emphasis. Under this head came a variety of individual studies, especially on the Arnot Forest.

The fact in 1910 that no other forestry agency was working in just this section of New York State gave to Cornell a unique opportunity which it was quick to seize and develop. Carried on at first in projects centering in the Cornell University woodlots, in the forest nursery, and in the laboratories of the Department, the opportunities for expansion which came with the acquisition of the Arnot Forest were indeed welcome. When that tract was more than doubled in size, its possibilities as a site for research greatly increased. But from 1927 the Arnot Forest became an indispensable unit under this first head of forestry investigation at Cornell.

As an indication of the sorts of study in progress on the Arnot Forest, the following titles, taken from the Forestry Research Project list for 1933–34, may be considered typical: management of second-growth hardwood types (computations of volume increment at five-year periods); relationships between soil type, soil temperature, ground-water level, and forest-tree rooting; establishment, culture, and development of forest plantations; and, at Ithaca, improved practice in the production of forest-planting stock; and methods of killing trees to prevent production of root suckers and stump sprouts.

Regarding the methods of attack used in approaching the problems under these several heads, it may be said that in the studies of growth and yield which make up the majority of the individual projects under the ecological studies both in south-central New York and in the Adirondacks, chief reliance was placed on repeated measurements made on permanent sample plots. These are accurately located areas, of varying size, on which at regular intervals—usually five years apart—remeasurements are made to determine the rate of growth, under different treatments, and to obtain other information as to the development of these typical stands of commercially valuable timber trees. All the regular plots were provided with adjoining, untreated, check plots. All were so plainly marked that they could be quickly relocated and visited at any time.

Research in the Adirondacks

The majority of studies made in the Adirondacks were devoted to determinations of growth and yield of the Adirondack species. They supplement those of the trees of central New York. The Adirondack work fell under two classifications: that done near Newcomb, on certain forest land of Finch, Pruyn and Company, later the Cornell Tract, and that performed in other localities. As to time, most of the latter preceded the work at Newcomb.

One long-continued series of sample-plot measurements were those made in the forest plantations at Axton, New York, set out by Dr. Fernow and his students of the “old” College of Forestry.
These sample plots were laid out by the United States Forest Service in 1905. Some of the remeasurements were in charge of Professor Guise and others of Professor Spaeth.

In the period from October 1917 to June 1920, Professor B. A. Chandler's work in the Department was primarily the investigation of certain forest problems in the Adirondacks which dealt, first, with silviculture and, second, with the marketability of forest crops. One was a study of red pine. While not published by Cornell, the data so collected were later combined with other material and made of use to the profession through the Forest Service.

Another study by Professor Chandler was an investigation of the Results of Cutting at Nehasane Park in the Adirondacks (Journal of Forestry, Vol. XVII: 378–385, 1919). This contrasted the growth by conifers and by hardwoods after the cutting made under the working plan prepared by Pinchot and Graves in 1897. (See The Adirondack Spruce, by Gifford Pinchot, The Critic Company, New York, 1898.) Professor Chandler also established sample plots on the lands of Finch, Pruyn and Company near Newcomb, New York.

From Professor Recknagel's familiarity with the whole Adirondack region, his intimate acquaintance with the Finch, Pruyn and Company lands, and the fact that so long as Cornell had students of professional forestry he was each summer one of the leaders of the Cornell Forestry Summer Camp, it was but natural that he should have had charge of the Adirondack projects. Under a comprehensive title, Volume Growth and Yield of Northern Forest Types under various Cutting Methods, he conducted numerous sub-projects that all related to this general subject.

One of these should perhaps have special mention: a study of the results of increasing the reproduction of the valuable conifers—spruce and balsam fir—by the girdling of large broadleaf trees. Several series of plots were laid out under this project, including one by Professor Guise. All were carefully watched and remeasured by Professor Recknagel down to and including a remeasurement made by him in the summer of 1942.

Extending over twenty-five years Professor Recknagel kept up the measurements and made the records of these areas at Newcomb and elsewhere in the Adirondacks. He published the findings of many,—for the most part as articles or notes in the Journal of Forestry. It is not necessary to cite them here. But it may be said that in the list of Professor Recknagel's writings, as given in the cumulated indexes of the Journal of Forestry, there are six such entries in the first (Volumes 15 to 27) and eight in the second (Volumes 28 to 37) and that other, later articles bring the record down to the year 1942.

Areas of special interest

In the early days of the Department, the Cornell University woodlots, as they were brought under management, served a useful purpose in its teaching work by becoming “demonstration forests.” Also, they were the sites of the first sample plots under the research program. It was in connection with volume studies of several species that Professor Bentley worked out a number of volume tables for local use which were of value to the forestry students and also to the public.

One example of sample plots established on a farm, in cooperation with the owner, were those at Mapleton, Cayuga County, New York, laid out in 1914. In articles in the Journal of Forestry, Professor C. H. Guise carried the account of this project forward over a considerable period—“Growth in Its Relation to Thinning” (Vol. 19: 546–549, 1921; Vol. 23: 156–159, 1925; Vol. 28: 16–22, 1930; Vol. 33: 419–421, 1935).

When the Arnot Forest was put under management, Professor Guise, as its first Director, laid out several series of sample plots in growth-measurement studies. These were separate and distinct from the sample plots on the Arnot under the direction of Professor Spaeth. One of the advantages of so large an area as the Arnot Forest is that it gives ample space for a large number of experiments, conducted by different men, under a variety of conditions and setups.
An example of the experimental trial of exotic forest trees was the establishment in the Luther Forest Preserve at Saratoga Lake, New York, in 1917, and in the Hyphen Woodlot at Ithaca, of plantations of the straight-growing variety of the Scots' pine of northern Europe, the so-called Riga pine. The indications are that this is an introduction from abroad that is to be welcomed in New York State.

Of similar nature was the introduction to New York State, by Professor Cope in the early 1940's, of a straight and fast-growing variety of black locust, of especial value for fence posts. (Black Locust for Posts) (Cornell Extension Bulletin 539, June 1943.)

As helping to meet a silvical problem Professor Bentley brought out in 1923 a classification of forest types in New York. This for ten years remained the accepted standard. In 1933, Professor Spaeth was a particularly active member of a committee of the Society of American Foresters which prepared the official reclassification of the forest-cover types of the Eastern United States.

Outside the realm of biology

Some of the more important investigations outside the realm of biology, or those concerning administrative phases of forestry, have to do with problems of marketing forest products. At various times in the history of the Department, members of the Staff made comparative studies of the log rules in common use in New York State and made public the findings that were of value to both buyers and sellers of logs, especially logs from farm woodlands. One of the studies made by Professor Chandler in 1919 dealt with conditions that determine the marketability of forest stands. Another conducted by Professor Recknagel, in 1936-37, had for its purpose the establishment of log grades that can be applied to standing trees, not merely at the mill or to the logs as cut in the woods. This is thought to be the first time that the preparation of log grades for northern hardwoods had been attempted.

Of another kind was a study in which for several years Professor Spaeth collaborated with Extension Forester Cope in working out a method of killing trees with sodium arsenite. This has proved of value in the eradication of "thorn-apples" in pastures, or unwanted species of trees along town and city streets (Journal of Forestry, Vol. XXIX: 775-783, 1931). It may be recalled that in the practical application of this method Professor Cope made a helpful contribution in the invention of the Cornell Tree Killing Tool, an ingenious device to make sure that the right quantity of poison is brought properly in contact with the cut made in the tree.

Problems of an historic or economic nature

In that the special interests of certain of the teaching members of the Staff lay in the fields of forest history, forest policy, forest management, administration, and economics, it is only natural that the research activities of these men should have had to do with investigations in these fields rather than in forest ecology or related subjects. The results of such studies were usually published elsewhere than in the memoirs or bulletins of the College since these deal more particularly with topics pertaining to the natural sciences. A number of them were, indeed, carried on through committees of the foresters' professional organization, the Society of American Foresters.

This in part explains why, compared with other departments, Forestry does not make a greater showing in the list of research publications of the College of Agriculture. It may be noted, however, that this seemingly unfavorable circumstance is offset by the fact that, in the opinion of the members of the profession of forestry, over a long series of years, the Cornell Department of Forestry maintained a leading position among the schools of forestry. In no small part this came about because of these very contributions.

The following contributions by several members of the Forestry Staff are illustrative of this sort of writing.

In the Society of American Foresters, on the important Committee on Forest Terminology — with Dr. B. E. Fernow as general chairman — which reported in January 1917, Professors Spring and Recknagel were chairmen, respec-
tively of the sub-sections on Silviculture, Silvics and Forest Description, — and on Organization, Mensuration, and Management.

During World War I, Professor Recknagel, as a member of the War Committee of the Society, did notable work in compiling exact statistics as to the stands of available timber in New York State, particularly spruce in the Adirondacks suitable for airplanes. Had the armistice not come just when it did, some of New York State's Adirondack Forest Preserve might have been taken over by the Federal Government for the United States Navy on the basis of that estimate; Article VII, Section 7 to the contrary notwithstanding.

With the coming of the National Recovery Act in 1933, under President Franklin D. Roosevelt, Professor Recknagel had a decidedly active part in the development of the Lumber Code. Serving first as Acting Secretary of the Northeastern Lumber Manufacturers' Association, he helped frame Article X of that Code, — the section dealing with forestry. Later he was one of the "Committee of Ten," set up to put Article X into effect. He was one of the five "industry representatives" and after the decision of the Supreme Court had rendered N.R.A. ineffective, he continued to work with the groups of progressive timberland owners who carried on the spirit of Article X in their operations, although no longer with the support and encouragement of Federal Law.

From 1932 to 1935, Professor Hosmer was Chairman of the Society Committee on Public Forests and Protection Forest Zones. He was to a considerable extent responsible for the elaborate report of that Committee published in the Journal of Forestry (Vol. XXXIII: 262–273, 1935). In 1937 he was reappointed to the Society Committee on the History of Forestry, of which he had served as Chairman from 1924 to 1930. He has continued a member ever since.

In 1940, Professor Hosmer, who is a charter member, prepared a brief but comprehensive Historical Summary of the Society. This, reprinted from the November 1940 Journal (Vol. XXXVIII: 837–854), was distributed at the fortieth Anniversary meeting, held in Washington in December of that year. By request he has written the chapter on the Schools of Forestry in the Semicentennial Volume, The History of American Forestry, which the Society is to bring out at its Fiftieth Anniversary, in Washington, in December 1950.


Professor Guise, during a two-year period of leave, one of which was a sabbatic year, was away from Ithaca from July 1929 to September 1931, to assist Dean Henry S. Graves of the Yale School of Forestry, chairman of a Society committee set up to study forestry education in the United States. This resulted in the book Forest Education, by Graves and Guise (Yale University Press, New Haven, Connecticut, 1932). This book at once became the standard authority on this subject for the United States, a position it continues to hold.

Other books by members of the Forestry Staff are mentioned elsewhere in this volume.

The thesis of the first recipient (J. P Kinney) of the degree Master in Forestry, in 1914, Forest Legislation in America Prior to March 4, 1789 (Bulletin 370, Cornell University Agricultural Experiment Station) — an original and unique contribution to the understanding of Colonial forest laws — has become a well-established reference in that field.

Following years saw the appearance of four Experiment Station Bulletins based on theses by graduate students of forestry, submitted in partial fulfillment of the requirements for the degree Master in Forestry, or, in the case of Dr. Graham, embodying the result of research projects.

374 Reforesting Methods and Results of Forest Planting in New York State. By B. H. Paul. April 1916.


While not published by Cornell as a bulletin, an abstract of a Master's thesis by Paul A. Herbert (M.F., 1922), \textit{Standing Timber Insurance}, with a bibliography prepared later by the author, was distributed by the Department in mimeographed form. It was reprinted by two different insurance trade journals.

Special research projects

Among the Memoirs of the Cornell Agricultural Experiment Station are a number from Staff members; also others from graduate students of the Department of Forestry. These are typical of true scientific research,—intensive study conducted by experiments designed and carried out to test the truth of certain tentative hypotheses that are set up with the expectation that from the study will be discovered facts and knowledge new to science. They include studies made both in the field and in the laboratory that are subject to exact control with instruments of precision. To make possible work of this character, a well-equipped laboratory was established in Fernow Hall for the exclusive use of the research professor in forestry and his assistants. Physical and chemical equipment of various sorts was obtained and put into use. The greater part of the cost of these installations was borne by Federal funds, under the Bankhead-Jones Act.

One such was published in 1935 by Professor Spaeth as Memoir 169, \textit{A Physiological Study of Dormancy in Tilia Seed}. This was based on the thesis presented by him for his doctorate at Yale. It at once explained the cause of dormancy in basswood and described a practicable way to overcome it. As basswood is an important forest tree, this made Dr. Spaeth's discovery a significant contribution. His thesis was a further development of one of the Forestry Department projects.

Research of a similar character, with other species in which germination is difficult, supplemented Professor Spaeth's work with basswood. Part of this was carried on by Dr. Michel Afanasiev (B.S., 1933; Ph.D., 1937; Cornell), who for several years was research instructor in the Department. Dr. Afanasiev resigned June 30, 1938, to become Associate Professor of Forestry in the Oklahoma State Agricultural and Mechanical College at Stillwater, Oklahoma. His thesis for the doctorate was later published as Cornell Agricultural Experiment Station Memoir 208, \textit{A Physiological Study of Dormancy in Seed of Magnolia acuminata}, in 1937.

Other memoirs are:

165 Forest-Type Studies in the Adirondack Region. By Carl C. Heimburger. June 1934

166 Acid, Anti-acid Buffering, and Nutrient Content of Forest Litter in Relation to Humus and Soil. By Max J. Plice. June 1934


The reorganization of the Department, in the years 1933 to 1937, reacted to the disadvantage of research in forestry at Cornell. Certain projects were still unfinished when Professor Spaeth resigned in June 1938 to go to Illinois. Otherwise more titles would appear in the list of the Department's research publications.
Cooperation with other research agencies

The fourth principal way in which the Department of Forestry took an active part in research was to cooperate with other agencies by sharing the use of its lands, buildings, and equipment or by having direct part in projects of mutual interest.

From the beginning, the Department maintained the most cordial relations with the New York State Conservation Department, formerly the Conservation Commission. The interchange of information, statistics, and other data was constant and uninterrupted.

Equally satisfactory were the relations with the United States Forest Service, in its several branches. In the period immediately after the first World War, Professor Recknagel found it possible to supply to the Forest Service statistical information about New York forests and lands that was not otherwise available.

THE CHARLES LATHROP PACK RESEARCH PROFESSORSHIP OF FOREST SOILS

The creation of the Charles Lathrop Pack Research Professorship of Forest Soils, in 1927, was a notable incident. It made provision for research in a field where literally in the whole world the number of really outstanding investigators came to less than a dozen. It was the first move for the study in the United States of the fundamental problems of forest soils. Incidentally, it was the first instance in Cornell University of the establishment with private funds of a chair in one of the state colleges. The endowment was $130,000, plus maintenance funds for a period of years. This made possible an adequate attack on the particular problems selected.

The Staff of the Department of Forestry had, justifiably, a somewhat personal interest in this matter, in that in all the initial arrangements the donor had dealt directly with this Department. Indeed it was his expectation that the Pack Research Professor of Forest Soils would be attached to the Department of Forestry. It was because of administrative reasons — mainly the fact that chemical laboratories were available in Caldwell Hall, and that there he would be in close proximity to the other research workers in soils — that it came about that the Pack Professor was designated a member of the Department of Agronomy.

It may be further disclosed — although not really a secret then — that for some time there was considerable question in Dr. Pack's mind whether his gift to advance forestry at Cornell should not be a Research Chair of Forest Genetics, rather than one of Forest Soils. Either would have been welcome. Both are fields needing investigation by highly trained specialists.

This is not the place to tell the story of the Charles Lathrop Pack Professorship of Forest Soils. But it may be said that intimate and cordial relations were always maintained by the Department of Forestry with Professor Doctor Lars Gunnar Romell, the first incumbent (1928 to 1934) and his successor Professor R. F. Chandler, Jr. (1938 to 1947).

Another example of close interdepartmental cooperation is that which, beginning through contacts with the soils mapping work under Professor F. B. Howe, developed into those with the soil-erosion experiment station of the United States Soil Conservation Service, located on the Arnot Forest, which is represented at Cornell by Dr. John Lamb, Jr., Project Supervisor. Under the direction of Dr. Howe a detailed soil map was prepared of the Arnot Forest.

The story of the Soil Erosion Experiment Station on the Arnot Forest also belongs elsewhere. But it does no harm to say here that the station on the Arnot is one of the few among similar soil-erosion experiment stations throughout the country where plots of existing forest have a regular place in the runoff layout.

Research had an important part to play in the Cornell Department of Forestry. Its Arnot Forest near Ithaca and its Cornell Tract in the Adirondacks remain available to render useful service in fields allied to forestry, in land use studies, and in other branches of conservation.
The earlier chapters have told of the three basic divisions of the work of the Cornell Department of Forestry. In a somewhat more intimate manner something may now be said of the special interests of the men who made up the Forestry Staff, more particularly from the autumn of 1914 when Professor Hosmer succeeded Professor Mulford as Head of the Department.

To one attempting to assess the accomplishments of the Cornell Department of Forestry, it may help to have before him an account of some of the things these men did as a part of their accustomed activities, but outside their regular duties. Such a listing may throw light on how it was that the Cornell Department of Forestry came to have the distinctive character which it certainly did possess during the years when it was primarily a school for the teaching of professional forestry.

That the senior members of the teaching Staff had all served under Gifford Pinchot in the early days of the Forest Service gave them a common point of view regarding forestry. This was intensified by the fact that all were alumni of the Yale Forest School. As has been set forth under Faculty (page 19), one result of this common background was that these men were all animated by an exceedingly strong esprit de corps. To them this was a vital thing. It found expression in intense loyalty to the Society of American Foresters as the embodiment of the Profession of Forestry in this country, and to the ideals and standards of the Forest Service as established by Pinchot and Graves when they, in turn, held the office of Federal Forester. Because it meant so much to them, each member of the Staff frankly endeavored to bring his students under a similar spell. Each did this in his own way, but the trait was one shared by them all.

It was but natural, then, that appointments to committees of the parent Society, and later, after 1918, of its New York Section, should have been accepted willingly as an opportunity for service, or that the routine of an elective office in the Society should have been faithfully carried through for the same reason. Running back over the annual reports of the Department—where as a matter of record mention was regularly made of the extra-curricular professional activities of the staff—it appears that service of this sort was constantly being given, year after year by each of its members. As younger men joined the organization, the custom was carried on as a firmly established procedure.

As well as work for the Society of American Foresters, this outside service also included that performed in positions on boards or commissions under both Federal and State Governments which directly or indirectly had to do with forestry. And to this was often added work of a public-service character in other lines. Only in exceptional cases was any financial return received by an individual in any of these activities; nor was any expected, so long as the expenses of the official travel in such work were covered.

These services were given with the idea of advancing forestry and for the good of the cause. That last phrase perhaps explains the true reason for all this activity. The senior foresters at Cornell grew up in the period when Forestry was a cause; one for which its advocates willingly stood ready to do much. The foresters at Cornell were not, like “G.P.,” reformers, but concerning Forestry, they certainly were actuated by something closely akin to the missionary spirit. That point of view found expression in these contributions of voluntary service.

THE SOCIETY OF AMERICAN FORESTERS

This enumeration may logically start with work carried on for, or done through, the Society of American Foresters. Besides the work on
Society Committees, mentioned under Research, Professor Recknagel served as Secretary of the New York Section of the Society in 1918 and 1919.

In 1921 and 1922, Professor Hosmer was Chairman, and in 1923 he was elected President of the Society of American Foresters. In that capacity he appeared before the United States Senate Select Committee on Reforestation at a public hearing held in Albany in September 1923. He presided at the annual meeting of the Society, held in Baltimore, Maryland, in December. In January 1924 he appeared, by invitation, as chief speaker at the annual meetings of the Canadian Forestry Association and of the Canadian Society of Forest Engineers in Montreal, and at the annual forestry banquet of the University of Toronto, in Toronto, Ontario.

In 1925 and 1926, Professor Bentley was secretary of the New York Section. In 1929, Professor Spring was chairman and Professor Spaeth secretary. Both were re-elected in 1930. It was the custom in New York State in those days to rotate the main offices of the New York Section among foresters in the State Conservation Department at Albany and the Schools at Syracuse and Ithaca. Consequently Cornell men filled those places at more or less regular intervals.

In December 1929, Professor Hosmer was elected a member of the Council of the Society of American Foresters, serving from 1930 to 1933. From 1930 he became, for ten years, chairman of the Society Committee on International Relations. In 1937, Professor Spaeth was Vice-chairman of the New York Section, and Professors Recknagel and Cope and Mr. Pond, chairmen, respectively, of the Section Committees on Taxation and Insurance, Wood Utilization, and Nominations. The previous year Professor Spaeth had been Chairman of the Section Committee on Nursery Practice. For the two years 1940 and 1941 Professor Recknagel was Chairman of the New York Section and Professor Wallihan a member of the Committee on the Use of Deciduous Trees.

Professor Hosmer, continuing as Chairman of the Society Committee on International Relations, lent a hand in the arrangements for American Delegations to attend the International Forestry Congresses in Rome, Italy, in 1926 and in Budapest, Hungary, in 1936. This resulted in interesting contacts with European foresters. Although not under the Society Committee, Professor Hosmer acted as Secretary of the Forestry Section of the International Congress of Plant Sciences, at its meeting in Ithaca, in August 1926.

**TRAVEL**

Prior to coming to Cornell all the members of the Forestry Staff had travelled somewhat widely within the United States as members of the Forest Service. But as an indication of their constant desire to broaden their horizons, mention may be made of some of the extensive trips in which, during the years, at their own expense, all these men engaged. Thus, in the twenties, both Professors Bentley and Guise made extensive circuits of the Western States. In 1921, Professor Hosmer visited England, France, Germany, Switzerland, and the Scandinavian countries. In 1926, Professor Spring went to southern Europe. The college year 1927–28 was spent by Professor Bentley in a trip to the West Coast, the Philippines, and Japan. In 1932, Professor Cope went to Germany, Denmark, Sweden, and Finland. And in 1939 Professor Hosmer made a two months’ tour to South America.

In connection with the study leading up to “Forest Education,” Professor Guise visited the leading schools of forestry in Europe, including Finland. In 1933, he was chosen a member of the Advisory Committee — in the field of forestry — of the Oberlaender Trust, a division of the Carl Schurz Foundation. In the summer of 1934, as technical adviser, he accompanied a group of American lumbermen who, as guests of the Oberlaender Trust, visited forests in Germany and Czechoslovakia.

Professor Hosmer (in 1928) and Professor Guise and Professor Cope (in 1934) were all made Corresponding Members of the Society of Forestry in Suomi (Finland). In 1934, Professor Hosmer was advanced to Honorary Membership. Pro-
fessor Ellwood Wilson was made a Fellow of the Society of Foresters of Great Britain in 1932.

PROFESSIONAL PUBLICATIONS

As a natural outgrowth of their work as teachers it follows that all members of the Cornell Department of Forestry have been frequent contributors of articles, notes, and book reviews to the Journal of Forestry; also of other papers to the popular forestry magazines, to trade journals, and to the bulletins and proceedings of numerous organizations allied to forestry.

As an indication of how the members of the Cornell Forestry Staff rate as to number and character of publications when compared with others in the profession of forestry, it may be of interest to refer to the comprehensive Selected Bibliography of North American Forestry, by Edward N. Munns (Miscellaneous Publication 364, two volumes, United States Department of Agriculture, 1940); also to the two Cumulated Indexes of the Journal of Forestry, 1930 and 1940.

As regards books on professional subjects, Professor Recknagel holds the palm among all the members of the Staff for number and frequency of publication. He started early and kept right on. On the basis of the year which he spent abroad, just before coming to Cornell, he prepared a series of articles on forests and forestry in Germany and Austria. These were published in the Forestry Quarterly (Vols. 10 and 11) — then still under the editorship of Dr. B. E. Fernow — and for a number of years remained an authoritative source of information on those countries.

In 1913, Professor Recknagel brought out his Theory and Practice of Working Plans, revised in 1917 as Forest Working Plans (John Wiley and Sons, New York). And in 1919, with Professor John Bentley, Jr., Forest Management (John Wiley and Sons). A second edition appeared in 1926, with Professor C. H. Guise as a second co-author. Both of these books have been widely used as textbooks in other schools of forestry. His other books are: The Forests of New York State (The Macmillan Company, New York, 1923); Forestry, with Professor S. N. Spring (A. A. Knopf, New York, 1929); and Introduction to Forestry — A Syllabus (Edwards Brothers, Inc., Ann Arbor, Michigan, 1932). To this last mentioned book other members of the staff also contributed chapters. He was editor of the Bulletin of the Empire State Forest Products Association, Albany, New York, from 1917 to 1943. He was a collaborator of Forstliche Rundschau — a German abstract journal of forestry literature — from 1928 to 1939. From 1913 to 1927 he served as a member of the Editorial Board of the Forestry Quarterly and, after 1917, of the Journal of Forestry. A long list of articles, book reviews and notes stands to his credit in the Journal of Forestry.

If Professor Hosmer had devoted to writing books the months he has spent during his lifetime in the preparation of annual and other official reports, he would have had many to his credit! His book Impressions of European Forestry — a series of letters written while on sabbatical leave in 1921–22, during a seven months’ visit to the countries of northern Europe — was favorably received. Since his retirement, his The Cornell Plantations, a History — published under the authority of Cornell University, in 1947 — has put on record how the Cornell Arboretum had its start and how it developed into the far-reaching organization of the lands and field resources of Cornell University, “the things that grow,” which we now know, in Liberty Hyde Bailey’s words, as “The Cornell Plantations.”

Professor Hosmer was a member of the original Arboretum Committee in 1928 and continues as a member (now Honorary) of the administrative committee of the Cornell Plantations. He is also a member of the Liberty Hyde Bailey Hortorium Committee of Cornell University. He has been a frequent contributor to the Journal of Forestry and to other forestry periodicals. It has also fallen to his lot to prepare for the Journal a number of obituary notices concerning certain of the older members of the Society. As has already been noticed under Teaching, he acted as Editor of the Proceedings of the Second National Conference on Education in Forestry in 1920. One
of his articles in this connection may be men-
mentioned here: The Progress of Education in For-
estry in the United States, in the Empire Forestry

The writings of Professor Spring, except for
Forestry—the book in which he collaborated
with Professor Recknagel in 1929—consisted
mainly, while he was at Cornell, of articles and
committee reports. Professor Spring was a mem-
ber of the Editorial Board of the Society in 1907,
1911, and from 1914 to July 1916. Professor
Spaeth was a collaborator for Biological Ab-
stracts.

In addition to being co-author of Forest Edu-
cation and of Forest Management, Professor
Guise collaborated in Conservation in the United
States with Professors Gustafson, Ries, and Ham-
ilton of the Cornell University Faculty (pub-
lished by the Comstock Publishing Company,
Inc., Ithaca, New York, 1939). That same year
appeared his Management of Farm Woodlands
and revised editions of the two latter books ap-
peared in 1949 and 1950.

Professor Cope had published an important
bulletin while in the employ of the State of
Maryland: Loblolly Pine: A Handbook for Grow-
ers and Users (Baltimore, Maryland, 1923). This
was revised as Bulletin 41 of the Maryland State
Board of Forestry, in June 1926, with the title,
Loblolly Pine: A Woodland Crop. His Cornell
bulletins and the Pack Foundation publication
have already been noted (pages 39 to page 41).

**POSITIONS OF A COOPERATIVE
CHARACTER**

From 1917 to 1943, Professor Recknagel served
continuously as Secretary of the Empire State
Forest Products Association, the organization
of the large timberland-owning companies in New
York State, with headquarters at Albany. The
work of this, a salaried position, he was able to
do in his spare time, to the mutual advantage of
the Cornell Department of Forestry and of that
Association. Under an agreement, fully under-
stood and approved by Dean Mann, and later by
Dean Ladd, he had the right to use for instruc-
tional purposes some of the statistical informa-
tion about certain of the larger privately owned
forests in New York, to which as Secretary he
has access. This, presented in combination with
other material, or semi-confidentially, was of
real value in his forest-management classes. This
arrangement served the Department well. It was
felt to be a happy form of cooperation with
representative forest industries. The consistent
following of forest-working plans by Finch, Pruyn
and Company, on their extensive tract in the up-
per Hudson River watershed, shows that it
worked both ways.

During summer-vacation periods, members of
the Forestry Staff, in various years, often engaged
in work of different sorts. Over the period in
question, up to 1936, almost everyone of the for-
estry professors had taught in the Cornell sum-
mer sessions; some for a number of years each.

From 1924 to 1942 Professor Hosmer was, as
has been said under Research, a member, by ap-
pointment by several Secretaries of Agriculture,
of the Research Advisory Council of the North-
eastern Forest Experiment Station of the United
States Forest Service. In 1932 he was elected a
Fellow of the Society of American Foresters.

In May 1942, shortly before his retirement as
Professor of Forestry, Emeritus, Professor Hosmer
was elected President of the Cornell Chapter of
Phi Kappa Phi for the year 1942–43.

**THE STATE CONSERVATION
DEPARTMENT**

From 1931 to 1940, when it was discontinued,
Professor Hosmer was a member of the New York
State Conservation Advisory Council, established
by Commissioner of Conservation Henry Mor-
ganthau, Jr., and continued by Commissioner
Lithgow Osborne.

The celebration of the fiftieth anniversary of
the official start of Conservation in New York
State found Professor Hosmer a member of the
Executive Committee of the Celebration Com-
mittee of One Hundred, appointed by Gover-
nor Lehman. In that capacity he helped plan the
program for the three-day meeting at Lake Placid, in September 1935,—and as a member of the sub-committee on publication he was one of those to supervise the Anniversary Book, written by Professor Gurth Whipple of the New York State College of Forestry, *Fifty Years of Conservation in New York State, 1885–1935*.

**COOPERATION WITH ASSOCIATIONS**

One state organization to which several members of the Cornell Forestry Staff devoted not a little time and energy was the New York State Forestry Association, later the New York State Forestry and Park Association. This, the second association of its name in this State, had a good list of accomplishments in its earlier years and was thought to be rendering helpful service. But in the difficult period which followed the depression, in the early thirties, a point was finally reached where it was felt best that its affairs be wound up. The Association was, therefore, officially and legally discontinued in 1941.

Elected a member of the first Executive Committee in 1915, Professor Hosmer remained continuously a member of that board until the Association was dissolved. Professor Recknagel was one of the auditors from 1923 to 1941. Professor Spring was also active, while at Cornell and later, on the Executive Committee.

In its earlier years, the Association published a quarterly magazine *New York Forestry*. Members of the Cornell Forestry Staff were frequent contributors. And at times Professors Hosmer and Recknagel each took over the task of being acting editor. One of the more important meetings of the Association was held in the Adirondacks in the summer of 1917 at Lake Placid, when a discussion of Forest Taxation was featured that had some effect later in securing the enactment by the New York State Legislature of the Fisher Forest Tax Law.

### CHAPTER 10

**WHY THE TEACHING OF PROFESSIONAL FORESTRY WAS DISCONTINUED**

The greater part of this history is an account of the development of the Cornell Department of Forestry and its accomplishments as that enterprise looks to one who, having had an active part therein, views it from the inside. The present chapter is necessarily from another angle. It attempts to record objectively, in a dispassionate way, the reasons which led the Board of Trustees of Cornell to order the termination of instruction in professional forestry at Cornell University.

In justice to those appointed by Cornell to carry on its Forestry Department, it is only fair that it be explained why a professional school against which the authorities at Cornell had never brought any criticism, should after over twenty years of faithful if not distinguished service be brought to a sudden end by orders of the Board of Trustees of that University.

**THE ANSWER**

In a few words, the answer is that those who controlled the administration of public education in New York State did not deem it expedient that the State should longer continue to maintain two state-supported schools both of which were training men for the practice of forestry as a profession. The other school was, of course, the New York State College of Forestry.
at Syracuse University in Syracuse, New York, established by the Legislature of the State of New York under Chapter 811 of Laws of 1911. The story of the first twenty-five years of that institution may be found in *A History of The New York State College of Forestry at Syracuse University, Syracuse, New York*, published by the College in September 1936.

The obvious solution was the closing of one of the schools. But in practice the situation was far from being that simple. The procedure that was followed in the action taken may be better understood if one knows something of the background.

The Department of Forestry in the New York State College of Agriculture at Cornell University in Ithaca, New York, had been set up by the Trustees of Cornell University in the spring of 1910, as has already been explained (pages 15 and 16).

At that time and until 1926 the financial affairs of the State College of Agriculture were administered through the State Department of Farms and Markets in Albany. In 1927, all the State Departments were reorganized. In this the State College of Agriculture was placed under the supervision of the State Board of Education, namely, the Board of Regents. There followed some tightening up on certain procedures which previously had been approved under the Department of Farms and Markets.

**THE HORNER INQUIRY**

As one result of this change of administrative control, there was undertaken, starting in 1930, an investigation of the forestry and the wildlife conservation activities of the New York State Colleges of Agriculture and also of Forestry. This task was assigned to Dr. Harlan Hoyt Horner, then Deputy Commissioner in charge of Higher Education. The investigation came to be called the *Horner Inquiry*. It continued for more than two years. The study made of the Department of Forestry at Cornell was certainly thorough and exhaustive.

In the spring of 1932, Dr. Horner submitted to the higher administrative officers of Cornell University a tentative draft of his report. Subsequently certain changes were made, at the request of President Farrand and Dean Ladd. The typed report was then presented to the Board of Regents. It was entitled *State Support of Forestry Education in the State of New York*. A copy is in the semiconfidential files of the Dean of the New York State College of Agriculture in Roberts Hall.

Following a number of conferences between representatives of the Board of Regents and of the Cornell Trustees, the Board of Regents approved the report, as did, a little later, the Board of Trustees of Cornell University.

From a memorandum summarizing Dr. Horner’s report, prepared in June 1932 by Dr. Cornelius Betten, then Director of Resident Instruction in the College of Agriculture, these paragraphs may be quoted:

The argument for taking a large part of the work in forestry out of the State College of Agriculture rests:
- Not on any fault of Cornell University to meet its obligations;
- Not on failure of the forestry unit at Cornell University to operate effectively and economically;
- Not on the idea that a unit much larger than that at Cornell is needed.

It rests wholly on the fact that duplication of effort should be avoided and on the opinion that it is more feasible to continue the larger unit now definitely established and strongly supported at Syracuse University.

The total state expenditures for forestry at Cornell University, not including overhead expenses of administration, heat, light and similar items, is $50,080. The department receives federal support in the amount of $3125.

On February 10, 1933, the Cornell Board of Trustees had before it the following letter from Commissioner Graves of the Board of Regents to Dr. Livingston Farrand, President of Cornell University:

At a meeting on December 15, 1932, the Board of Regents endorsed the agreement reached at the Conference field between their representatives, and the representatives of Cornell University, on December 10, with reference to the continuance of forestry work in the College of Agriculture at Cornell University. The agreement reached at the conference and endorsed by the Regents may be briefly stated as follows:

1. No future students are to be admitted to the professional courses in forestry leading to the Bachelor’s degree.
2. Students now enrolled in such professional courses are to be permitted to graduate. This means that the final class will be graduated at the end of the academic year 1935–36.
3. The present permanent staff in the Department of Forestry will be continued and elementary courses in woodlot management, extension work in forestry, and
graduate work in the general field of forestry will be continued.

4. The possible savings to the state through this changed procedure are to be worked out by Dean Ladd of the College of Agriculture and Assistant Commissioner Horner, and reported from time to time, through the usual channels, to the Budget Director.

It was my understanding that, upon notice of the endorsement of this agreement by the Regents, you would seek like endorsement from the Trustees of Cornell University.

The approval of the Board of Trustees was duly given.

THE YEAR 1936 37

That the historical record may be complete it is to be noted that in the third paragraph of the foregoing letter from the Board of Regents, provision is made for the continuation in service of the permanent staff in the Department of Forestry and that graduate work in forestry, as well as Extension work and elementary courses in woodlot management, will be continued.

These concessions had resulted from the conferences of 1932, although Dr. Horner's original recommendations had been specific that all "professional courses in forestry on either the undergraduate or the graduate level cease at the end of the year 1932-33."

It would be untrue to deny that the years from 1930 to 1936 were trying ones for the members of the Forestry Staff. Frankly its members would have welcomed a change to a graduate and research status. This is indicated in the news letter sent out from President Farrand's office on February 20, 1933, a copy of which follows. Various plans were elaborated to that end with the approval of Dean Ladd. In that they failed to develop it is unnecessary to discuss them here. For early in the spring of 1936 it became evident that the arrangement which had been granted by the Board of Regents in December 1932 was an armistice, not a final settlement.

Reorganization of the Department of ForestryCornell University

The work of the Department of Forestry at Cornell University is hereafter to be devoted primarily to research and to the teaching of graduate students who seek advanced degrees. Undergraduate instruction in professional forestry is to be discontinued at Cornell.

This step is the result of action taken by the Board of Trustees of Cornell University at a meeting held in Ithaca February 11, 1933.

Dr. Livingston Farrand, President of Cornell University, announced that this plan had previously received the endorsement of Dr. Frank P. Graves, Commissioner of Education, and of the Board of Regents of the University of the State of New York. Its essential features are, that with the beginning of the next academic year, 1933-34, the Department of Forestry of the New York State College of Agriculture will cease to receive undergraduate students of professional forestry.

Those undergraduate students of professional forestry now in residence in Ithaca, the classes of 1933, '34, '35, and '36 will be carried through to graduation with the B.S. degree, under the existing curriculum. After June 1936 all teaching of undergraduate courses in professional forestry will cease at Cornell.

The Cornell Department of Forestry will after June 1936 limit its undergraduate teaching of forestry to such courses in farm forestry, including instruction in the elements of woodlot management, and other general courses as may be required to round out the agricultural curriculum.

The teaching members of the Department of Forestry will, thereafter, except for the giving of the courses in farm forestry, devote all their time to research and to the teaching of graduate students, candidates for advanced degrees.

Extension work in forestry will be continued as one of the functions of the Department of Forestry under the general program now in force.

DR. HORNER'S SECOND REPORT

In the years since 1932 Dr. Horner had been at work on another report, Duplicating of Instruction and Research in Wildlife Conservation and Management in the College of Agriculture at Cornell University and in the College of Forestry at Syracuse University. This report bears the date May 15, 1936.

It is not necessary to go into the full story of this inquiry here as only in part did it concern the Department of Forestry at Cornell. But in making it Dr. Horner became more than ever convinced that there had been a "long record of duplication of effort" between these two colleges.

In developing his recommendations as to the wildlife problem, Dr. Horner several times refers to the "Forestry situation," and in the first of his four recommendations gives this as the first step: "Carry out the original proposals in the forestry inquiry made four years ago and discontinue entirely support of forestry instruction and research on the graduate level in the College of Agriculture. Such action will remove at once all possibility of future duplication and rivalry in this field between the two institutions."

Because the other three recommendations in
Dr. Horner's second report are the foundation on which rests the Department of Conservation at Cornell, the reader is referred to a statement on page 61 by Dr. Gustav A. Swanson, in which they are quoted.

These recommendations evidently all had weight with the Board of Regents, for in the summer of 1936 a memorandum endorsing them was sent to Ithaca, where it received the approval of the Council of State Colleges and by it was referred to the Board of Trustees of Cornell University. On November 6, 1936, the Trustees authorized the Dean of the College of Agriculture to approve the Agreement as submitted. Similar statements having been likewise approved by the other institutions concerned, the ruling giving force to this memorandum became effective on June 30, 1937.

**CHANGE OF STATUS ANNOUNCED**

The discontinuation of the teaching of professional forestry at Cornell was formally announced in a news release from the Office of the Dean of the New York State College of Agriculture on March 26, 1937. For purposes of record that statement is reproduced herewith.

March 26, 1937

**REORGANIZATION OF DEPARTMENT**

**Discontinuation of the teaching of professional forestry at Cornell**

Pursuant to suggestions made by the Board of Regents of the University of the State of New York,—the State Department of Education,—the Trustees of Cornell University and of the New York State College of Forestry at Syracuse University have recently taken action that will result, after July 1, 1937, in changes in the teaching programs in the field of conservation offered by these two institutions.

After July 1, according to an announcement made by Dean Carl E. Ladd of the New York State College of Agriculture at Cornell University, all instruction in professional forestry, both graduate and undergraduate, offered under state auspices, is to be concentrated in the N. Y. State College of Forestry at Syracuse, and similarly all professional instruction in wildlife conservation and management in the New York State College of Agriculture at Cornell.

As regards forestry this action was foreshadowed when in February 1933 the Cornell Board of Trustees ordered that undergraduate instruction in professional forestry be terminated at Cornell in June 1936, with the graduation of the classes of undergraduate students of professional forestry then in residence. With the granting, at the end of the present college year, of the degree Master of Forestry to the graduate students in forestry now at the University, Cornell will cease to confer that professional degree and the Department of Forestry will no longer receive either graduate or undergraduate students of professional forestry.

The Cornell Department of Forestry will thereafter limit its instruction to courses, non-professional in character, designed to round out, as to forestry, the programs of students of Agriculture or of Wild Life Conservation and Management. The extension work of the Department of Forestry will be continued as in the past, following the general program which has been actively pursued in recent years.

To serve students in any department of Cornell University who are especially interested in farm or woodland forestry, or who desire general information about forestry and the broader aspects of conservation, including wildlife conservation in relation to forestry, the courses covering these subjects will be continued. Graduate students in fields allied to forestry may elect to work, in subjects other than professional forestry, under the direction of members of the Staff of the Department of Forestry, as candidates for the degrees Master of Science and Doctor of Philosophy.

**STATEMENTS AS TO THE DEPARTMENT OF FORESTRY**

Were further proof needed that the termination of the teaching of professional forestry at Cornell was not caused by dissatisfaction with the members of the Forestry Staff, or by criticism of the curriculum, it is amply supplied by Dr. Betten's summary of Dr. Horner's original report, (page 55.) This is further supported by several statements by Dr. Horner in that report. In one he admits frankly that a mistake was made by the State in 1903, when it discontinued the "old" college at Cornell, although he holds that it is "too late now to remedy that error." Elsewhere in that report Dr. Horner makes a special point of recording that the Faculty of the Department of Forestry have served the State and Cornell University with singular devotion over a long period and have rendered conspicuous professional service. (Page 118.)

It is only fair to say that within the limits of the announced objectives, the course in forestry at Cornell University has abundantly proven its academic worth and has won a deservedly high place among institutions of its kind throughout the country. (Page 61.)
The reasons which actuated the Cornell University authorities to take the stand which they did in this matter are further indicated in the following statement from the Report of Dean Ladd (pages 14 and 15) in the Forty-ninth Annual Report of the New York State College of Agriculture, for 1936, under this heading: The Close of Undergraduate Professional Courses in Forestry. This also should appear in the record.

It is with both pride and regret that the College closes its undergraduate professional courses in forestry.—pride in the successful training of many students, regret that circumstances have so developed that professional training in forestry in New York State must be taken away from its natural setting in the broader field of agriculture. However strong these regrets may be, it seemed best to join unreservedly in the present solution of an impasse that has developed over many years. The professional work in forestry is now located wholly at the State College of Forestry at Syracuse University; the Extension work in forestry will continue under the direction of the Director of Extension at Cornell.”

AN ESTIMATE OF CORNELL FORESTRY

So much for official expressions. Now, to conclude this chapter, it is appropriate to refer to an estimate of the Cornell Department of Forestry made from another, and more personal, angle. Its author is a man intimate with forestry, who is fully in sympathy with the aims and aspirations of the members of the Forestry Staff. This is the article by Professor Bristow Adams which appeared in the July 1937 issue of the Journal of Forestry (Vol. XXXV, pages 649–653) Cornell: An Appreciation. Written by one who in a unique way was in a position to know all the facts, it reflects the attitude of many members of the American Profession of Forestry toward the Cornell Department of Forestry and its work.

Thus ends the outstanding work of Cornell, pioneer and leader in forestry instruction, as far as concerns professional instruction in forestry. The present staff continues courses in farm forestry; for at least a third of New York's forest area is on farms, and the state ranks second in revenue from such woodlands. . . .

Historians will catalog the courses, furnish student statistics, list the legislative acts, and inventory the achievements. Some member of the present faculty may write such a record, characterized by a dispassionate accuracy. Modestly, he may leave out of the picture much of the atmosphere and the spirit which have impressed one who knew something of the "Old School," and has been permitted to know much of the "New School."

He has seen the team-play of the staff for more than twenty years and has noted how men of widely different temperaments worked together harmoniously and effectively. Questions of administration and policy were matters of free discussion in staff meetings, where many differing opinions might be offered; but when the decision was reached, it was always sure of unity of support. . . . The plan worked successfully for a quarter of a century, and it was to the morale engendered by this faculty comradeship that much of the strength of the Cornell Department of Forestry was due. . . .

The forestry camps were both a joy and a despair to the students. The joy came from the intimate playful association with the "profs" in camp life; the despair from the continuous hard work. As one of their songs expressed it:

"Six reports before we go
Curves and card-index also
Each one said, I'm feeling rather low;
It's been no vacation!

But there was joy in the working. Faculty and students found time to write songs and to sing them, too, led at first by Bentley and, after Jack died, by the lusty Recknagle. Never was more earnest endeavor and more blithe-some gayety combined in any school, and never were students any happier or any busier.

They had every opportunity to keep up with the latest developments; they helped with the many College woodlots, they had a part in the development of Cornell's Arnot Forest, one of the foremost demonstration forests of the eastern United States; they knew the Adirondacks, and the southern pineries from summer field trips, and they became familiar with forest work on many other tracts. Their professors held high place in national, state, and local organizations and associations of foresters and of the lumber industry; and these professors shared with the students the results of meetings and conferences.

These students have made places for themselves, notably in the federal Service, where the proportion of those who have passed the government's technical examinations has furnished an outstanding record. . . . "Old School" and "New School" have passed as far as concerns the professional training of foresters. . . . But the sincerity and seriousness with which all of Cornell's work in forestry has been done, leaves an indelible stamp on the future. And there, after all, is the real reward. Its light was worthy because it was kindled with enthusiasm and kept aflame by a spirit of unselfish service. Looking back, there is a task accomplished; looking ahead, one sees many generations building upon the foundation laid at Cornell, and keeping green the memory of the school and of those who made it great.
CHAPTER 11
THE YEARS FROM 1937 TO 1948
With a Statement by Professor Gustav a. Swanson on The Department of Conservation
at Cornell University

REORGANIZATION OF THE DEPARTMENT

The action taken by the Board of Trustees of Cornell University on November 6, 1936, sharply brought to a close a distinctive period in the life of the Cornell Department of Forestry. It led immediately to several significant changes. On February 15, 1937, Professor Guise was transferred to the Office of the Director of Resident Instruction, as Professor of Personnel Administration. In June 1937, when the giving of instruction in professional forestry finally ceased, the Department necessarily dropped out of the list of the “accredited” schools of forestry recognized by the Society of American Foresters.

The activities of the Department to be strengthened by the reorganization were those in Extension. The recommendations in both the Horner reports had specifically endorsed Extension as being a part of the forestry work to be continued and further developed at Cornell. Under this mandate Extension took on added importance. It has been vigorously carried forward by Professor Cope, both in ways that had proved their worth in the past and in new developments that increase the farmer’s income. Extension in forestry continues an important function at Cornell.

From February 1937 until June 30, 1942, the regular teaching staff of the Department consisted of Professors Hosmer and Recknagel, with Professor Bristow Adams continuing his course Conservation of Natural Resources through 1945. Until his retirement on June 30, 1942, Professor Hosmer offered his course The Field of Forestry; and, for the four years 1938 to 1942, he also gave a new lecture course, of two hours’ credit, Wildlife Conservation in Relation to Forestry, open only to those students regularly enrolled in the then four-year program of Wildlife Conservation and Management. It dealt essentially with the administration of wildlife matters in the departments of the Federal Government which handle, in part, that form of Conservation, and with the wildlife work in relation to forestry carried on by certain States. It will be seen that, using Dr. Horner’s word, all of these courses were “ancillary” either to the instruction in general agriculture or to that in wildlife conservation and management.

THE PROGRAM OF FARM FORESTRY

After July 1, 1937, the teaching of farm forestry held first place in the courses offered by the Department. This was no new departure at Cornell. From the inception of the Department of Forestry instruction had been offered regularly in this subject; usually by means of three courses, all given each year. What happened in the autumn of 1937–38 may be called a shift in emphasis. What had previously been a secondary phase of the teaching of the Department now was expanded to assume chief place.

As the term farm forestry has always been used at Cornell, it means not a specialized or limited kind of forestry, but rather the skillful application of the broad principles of forestry, with particular reference to farm woodlands and farm problems. Cornell has always held that it is as necessary to have trained foresters to teach farm forestry as to give instruction in any other branch of this applied science.

Professor Recknagel followed Professor Hosmer as Head of the Department on July 1, 1942, serving until his own retirement on December 15, 1945. He taught the courses in farm forestry. On January 1, 1944, he was succeeded as Head of the Department of Forestry by Professor Ced-
ric H. Guise, who held that office until September 1948. Since then he has continued as Professor of Forestry in the (new) Department of Conservation.

Under Professor Guise the courses in farm forestry have been rearranged, and a new course introduced, Conservation of Natural Resources. Appropriately, the second edition of Professor Guise's book *The Management of Farm Woodlands* (1939) appeared in 1950, and the third edition of another book of which he is co-author, *Conservation in the United States* (1939), in 1949.

Continuing the custom of extra-curricular activities in forestry, Professor Guise has been active on committees of the Society of American Foresters and on the special Committee on Forestry of the New York State Joint Legislative Committee on Interstate Cooperation of which Assemblyman Harold C. Ostertag is the efficient chairman.

**FOUR NEW APPOINTEES**

After the customary consideration of a group of candidates, Dr. Ellis Flower Wallihan (B.S., 1934, M.S., 1936, University of California; Ph.D., 1938, Cornell) was appointed Research Assistant Professor of Forestry on July 1, 1938. Having specialized in his graduate study in plant physiology, and later in forest soils, Dr. Wallihan brought to his new duties the point of view of a research worker primarily concerned with the fundamental problems that underlie forest practice, and of applying to them the latest developments in plant physiology and soil science.

The appointment of Dr. Wallihan was made on the basis that continuing research was necessary to support certain projects which bulk large in the forestry Extension program. Particularly did this apply to a state-wide experiment of planting broadleaf forest trees, in which Professor Spaeth had been cooperating with Professor Cope. It was on these grounds that Dean Ladd recommended this appointment and that it was approved by President Farrand and acted on favorably by the Board of Trustees. The majority of the projects of which Professor Wallihan was leader were financed by Bankhead-Jones Federal funds; approved by the Director of Research, Dr. C. E. F. Guterman, in whose office are on file the descriptive statements and annual reports concerning them.

During a considerable part of World War II Professor Wallihan was on leave from the College, engaged in special wartime investigations for the Navy. He returned to Cornell in January 1946 as Assistant Professor of Forest Soils. Cornell University Agricultural Experiment Station Bulletin 853, *Plantations of Northern Hardwoods; Some Factors Influencing Their Success*, embodies the results of his studies in the Department. Professor Wallihan resigned June 30, 1948, to join the staff of the University of California Agricultural Experiment Station.

For four months in the autumn of 1942, before he was called for war duty, Earl L. Stone, Jr. (B.S., New York State College of Forestry, Syracuse, 1938; M.S., Wisconsin, 1940; Ph.D., Cornell, 1948) held a temporary appointment on the Staff of the Department of Forestry. Upon his return from military service he succeeded Professor R. F. Chandler, Jr. as Assistant Professor of Forest Soils in the Charles Lathrop Pack Chair of Forest Soils, established in 1927.

Fully to round out the list of Forestry appointees to July 1949, the name should be included of Robert R. Morrow, Jr. (B.S., 1942, M.S., 1948, Ph.D., 1949, New York State College of Forestry, Syracuse). Actually Dr. Morrow was appointed in the Department of Conservation as Assistant Professor of Forestry on July 1, 1949.

On October 31, 1943, James D. Pond resigned as Extension Instructor, to set up in business in Ithaca as a consulting forester. He was followed as Extension Instructor on November 15, 1943, by Fred E. Winch, Jr. (B.S., University of Maine, 1936; M.F., Cornell, 1937). In the years from 1937 to 1943, Mr. Winch had been with the Soil Conservation Service in Virginia. He was promoted to Assistant Professor on April 1, 1947, and to Associate Professor on July 1, 1949. His duties have been especially with the 4-H Club forestry projects, and, in the summer of 1948, with a new development, the first of the 4-H Conservation Training Camps.
**FORESTY MERGED WITH CONSERVATION**

And so this historical summary comes to the time, in September 1948, when by action of the University Trustees there was established the Department of Conservation in the New York State College of Agriculture at Cornell University. With it were merged other units in the College devoted to the conservation of natural resources, including forestry.

Those who have been interested to read this book may wish to know what lies ahead in Conservation at Cornell, with its headquarters in Fernow Hall. The authoritative statement that follows is by Dr. Gustav A. Swanson, Professor of Conservation and Head of the Department. It is reproduced with his permission.

**PROGRAM OF THE DEPARTMENT OF CONSERVATION**

Gustav A. Swanson

The Department of Conservation in the New York State College of Agriculture, established in 1948, was actually a reorganization and expansion of existing programs, rather than anything really new. Fish and Wildlife conservation work was initiated at Cornell at an early date. In 1906, only two years after the State College of Agriculture itself was established, Dr. J. G. Needham was appointed Professor of Limnology, and in 1911 Dr. G. C. Embody became instructor in agriculture and began developing the work in fish culture and fishery biology which was to become so familiar. His bulletin, *The Farm Fish Pond*, published in 1915, was the earliest American treatise on this subject. It was owing to the efforts of Dr. Embody in the rapidly developing field of fishery biology, and to the staunch cooperation and financial support of the State Conservation Department that an experimental fish hatchery was built adjacent to the Cornell campus, and this is still one of our highly valued research and training facilities.

The work in game management dates from 1917, when the American Game Association was interested in sponsoring a program of professional training in game farming and game management, and in cooperation with the United States Biological Survey, selected Cornell as an appropriate site for developing this program. During 1917-18 the first series of lectures on wildlife conservation and game farming were given and one of the courses in our present curriculum, an introduction to conservation of wildlife, has been given continuously since that date. The name of Dr. Arthur A. Allen is, of course, most closely identified with this phase of the work because it was under his leadership that it continued for 30 years.

The background of training in vertebrate zoology so necessary for the wildlife manager was greatly strengthened by the addition in 1924 of work in systematic vertebrate zoology and ecology under Professor A. H. Wright, joined later by Dr. William J. Hamilton, who introduced his course in economic zoology in 1934.

In view of the early beginnings of fishery and wildlife conservation work at Cornell, and their continuation for several decades even though admittedly on a modest scale, the reasons for establishment of the new Department of Conservation at Cornell may seem obscure. Actually, they are rather simple. The two phases, fishery and wildlife conservation, had developed quite independently and in different departments, the fishery work in the Department of Entomology and the wildlife conservation work under the sponsorship of Dr. Allen in the Department of Zoology. The administration at Cornell felt that these two closely related aspects of conservation should be organized in the same department to provide a more integrated course of instruction. There was, however, another important reason. When the State of New York decided, in the early 1930's, that it was unnecessary to support four-year courses in forestry at both Cornell and Syracuse, it was determined to concentrate the professional forestry work at the State College of Forestry at Syracuse. A parallel study was made of duplication of effort in the two state institutions in the field of wildlife conservation, and since the resulting decision played an important role in the organization of the present department, it may be pertinent to quote briefly from the agreement as it was approved in 1937 by the Board of Regents of the State of New York and by the New York State Colleges of Forestry at Syracuse and Agriculture at Cornell:

"(1) ... Such non-professional instruction in forestry as may hereafter be given in the College of Agriculture shall be ancillary to the course in agriculture and to the courses in wildlife conservation and management.

"(2) ... The full development of instruction and research in wildlife conservation and management, as now
contemplated in the College of Agriculture, shall be recognized, endorsed, and supported.

"(3) . . . All undergraduate and graduate instruction and all research in professional forestry shall be concentrated in the College of Forestry. Such non-professional instruction as may hereafter be given in the College of Forestry in wildlife conservation and management shall be confined to that necessary to the maintenance of a full forestry program, but shall be ancillary rather than fundamental in the forestry course of study.

"(4) . . . The Roosevelt Wildlife Forest Experiment Station, authorized by statute, in the College of Forestry, may be continued, but shall hereafter confine its research program to study of wildlife problems and experimentations strictly in correlation with study of the management of the forest."

With this historical background, the present structure of the Department of Conservation at Cornell may be understood more easily. In addition to the fishery management and wildlife-management phases which have been mentioned already, the Department includes the background sciences of vertebrate animal ecology, ornithology, mammalogy, ichthyology, and the limited work in forestry, conducted now by four staff members. One of these men, Professor Guise, teaches courses in farm forestry for students in general agriculture and in woodlot management for the wildlife students. A second, Dr. Morrow, conducts research in the farm forestry field. The remaining two, Professors Cope and Winch, are engaged in an active program of forestry Extension work under the Agricultural Extension Service.

While the Department is only about two years old, and is still gradually feeling its way, a few developments of possible interest have occurred. A strong need has been felt for many years for Extension work in the game and fish conservation field, and this has necessarily been handled in the past on a strictly limited basis by men who were appointed primarily for resident teaching and research. The need for wildlife Extension work has grown, and one of the first decisions of the new department was to add a staff member in this field. Dr. Wilson F. Clark undertook his duties as wildlife Extension specialist in June, 1949, and is already up to his ears in an active program of forestry Extension work among 4-H Club members and farmers in the state. The strong stimulus given to the farm-pond program by the Soil Conservation Districts has created such a demand for information on this topic that this alone has taken a considerable proportion of his time.

Wildlife management, although taught for many years under Dr. Allen's supervision, usually with the assistance of an instructor, had never been accorded a permanent full-time professor until the new department was established and more adequate financial support was available. Dr. Oliver H. Hewitt, recently of the Dominion Wildlife Service in Canada, has been appointed to this position, with the responsibility of developing a fuller program of both instruction and research in the wildlife-management field.

Another full-time professor has been added to develop the field of oceanography and marine fisheries. Marine fishery research has been expanding so rapidly in recent years that many men, including a number of Cornell graduates, whose training had been in freshwater work, were being attracted to marine positions. It was felt that a real service could be rendered to the conservation field generally by adding a modest program of oceanography which would nicely round out our offerings in the fishery field. Arrangements were made, therefore, with the Woods Hole Oceanographic Institution whereby a member of their staff, Dr. John C. Ayers, was transferred to Cornell and appointed to the oceanography position here, with the privilege of continuing his research program at Woods Hole each summer and of bringing advanced students there for their saltwater experience.

At the present, therefore, our staff includes, on the aquatic side—Professors E. C. Raney in ichthyology, D. A. Webster in fishery biology, Arthur M. Philips, Jr., in fish culture and nutrition (only part time with Cornell—mainly serving Fish and Wildlife Service), and J. C. Ayers in oceanography; and in the wildlife field—Professors A. A. Allen and P. P. Kellogg in ornithology, W. J. Hamilton, Jr., and W. Robert Eadie in mammalogy, and Dr. O. H. Hewitt and myself in wildlife management; Professors C. H. Guise, J. A. Cope, Fred Winch, Jr., and R. R. Morrow, Jr. in forestry; and W. F. Clark in wildlife Extension. In addition, two men who serve primarily in other departments carry joint appointments in the Department of Conservation because of the closely related nature of their work—Dr. E. L. Palmer in the field of conservation education, and Dr. David C. Chandler in limnology.

There are roughly 60 undergraduates and 30 graduate students now enrolled (1950) and no increase is expected because registration throughout Cornell is restricted to a predetermined quota which will insure adequacy of research and instructional facilities, as well as housing.

In each of the fields of specialization included in the Department active research projects are under way, of which only a few can be mentioned. Wherever possible these projects are cooperative. Dr. Webster and graduate students are engaged in cooperative studies of stream and lake trout with the State Department of Conservation and the United States Fish and Wildlife Service, and the same agencies are cooperating in a study of the sea lamprey problem in the Finger Lakes where it is hoped the more restricted size of the waters may permit intensive researches not possible in the Great Lakes.

Dr. Raney has recently completed a survey of the status of striped bass research needs along the northeast Atlantic Coast in which a number of private, state, and federal agencies cooperated, and he is currently engaged, with cooperation again of the State Conservation Department, in zoogeographical studies of the fishes of New York.

The farm fish-pond studies were supported financially
by the New York State Conservation Council, and have been given much excellent aid by the United States Soil Conservation Service and the State Conservation Department.

Time does not permit a complete cataloging of current research, but I should like, in closing, to mention two efforts in the terrestrial wildlife field. Dr. Eadie's major research has been upon better methods of controlling wildlife damage, particularly the vexing problem of mouse damage to orchards, and his researches have developed much new information on life history and habits of these rodents, as well as more economical means of controlling their numbers. Dr. Hewitt has initiated, during his first year with us, a long-term program of game research on our largest study area, the Arnot Forest. This partially wooded tract is typical of much of the abandoned farm land of southern New York, and its convenient location, only 18 miles from the Cornell campus, makes it a favorable research area. Much of the open portion of the Arnot tract is employed by the Soil Conservation Service for its research and we are thus privileged to cooperate with them in many problems of mutual interest, such as developing and testing promising shrubs for wildlife and erosion control value.
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