Forestry Education at The Iowa State College

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Iowa State College

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The years 1870 to 1890 constitute a period during which the nation became conscious of the importance of forestry. Early in the period, in 1873, Franklin B. Hough presented a paper before the American Association for the Advancement of Science, describing the evils of deforestation and stressing the benefits of forestry. The paper so stirred the meeting that Dr. Hough was made chairman of a committee which reported back to the Association in 1874. This report was instrumental in the establishment in 1876 of a Division of Forestry in the U. S. Department of Agriculture of which Dr. Hough was placed in charge.

Dr. Hough was charged with the task of making a comprehensive study of many phases of forestry in the United States. He and his associates apparently worked diligently at the task for in 1877 he presented a report which was published in 1878 by the Government Printing Office under the title "Report Upon Forestry". Eighteen pages of this report are devoted to forestry in Iowa besides numerous references to Iowa in various statistical tables. The report frequently refers to the Iowa Agricultural College (now the Iowa State College of Agriculture and Mechanic Arts) and the State Horticultural Society.

The State Horticultural Society as early as 1872 had offered premiums to encourage tree planting. The Society distributed a pamphlet containing instructions for the handling of forest tree seeds and plants and for the establishing of plantations and shelterbelts. Dr. Hough wrote, "the importance of this subject (forestry) has been also frequently discussed for many years, as well in the public journals as by speakers at agricultural and horticultural fairs, so that it may be truly said of Iowa that no state in the Union has so generally been awakened to the importance of tree planting."

When we consider Dr. Hough's statement regarding the interest of Iowans in forestry and the interest which had been generated nationally in all forms of conservation, it should cause little surprise to learn that a course in forestry was provided at the Iowa State College as early as 1874. The course in forestry as offered in 1874 embraced "seed beds, hedging, economical arboriculture (practical forestry), and shelterbelts." Undoubtedly the
college officials held the opinion that some knowledge of such an important soil crop was a necessary adjunct to training in agriculture. Insofar as we can determine, Iowa State College holds the distinction of offering the first formal college course in forestry in the United States.

CURRICULUM

As a result of the awakened interest in forestry between 1870 and 1890 and of the rapid developments in this field after 1890, a demand arose for men trained to do the many types of work necessary to the complete practice of forestry. In the light of the early interest of Iowa people in forestry and the demand for trained foresters for both state and national work, it was quite logical that professional training in forestry should be provided at the state's technical school—the Iowa State College. Many Iowa boys sought training of this nature and the demand became so insistent that in 1903 professional training in forestry was inaugurated. Earle D. Ross in writing a history of Iowa State College states, "forestry came to professional status in 1904 in charge of Hugh P. Baker whose noted teaching and administrative career was just beginning."
When Professor Baker came to the staff, several technical courses in forestry were added to the curriculum. The work in forestry was offered in the course in Horticulture and Forestry.

The college catalogue for 1909 lists seven forestry courses as follows:

- Farm Forestry — Three semester hours
- Silviculture — One semester hour
- Advanced Silviculture — Two semester hours
- Forest Development and Policy — Two semester hours
- Wood Technology — Two semester hours
- Forest Utilization — Two semester hours
- Timber Physics — Two semester hours

In addition, the students in training for professional forestry work were required to take work in mathematics, English, botany, chemistry and in the social and agricultural sciences. Many of the courses taken by the forestry students were common to majors in horticulture.

The catalogue for the 1912-13 college year lists a change in the forestry program which gave greater emphasis to forestry. Beginning in 1912 freshmen forestry students were required to take a core of subjects which were common to all students in the Division of Agriculture. The subjects required in the sophomore year were taken both by horticulture and forestry majors. On becoming juniors, forestry students took courses in a "forestry group" all of which dealt primarily with some aspect of forestry.

The catalogue for this year lists the following forestry courses:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Semester Hours</th>
<th>Subject</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm Forestry</td>
<td>2</td>
<td>Forest Protection</td>
<td>1</td>
</tr>
<tr>
<td>Silviculture</td>
<td>3-1/3</td>
<td>Forest Administration</td>
<td>2</td>
</tr>
<tr>
<td>Advanced Silviculture</td>
<td>3-1/3</td>
<td>Wood Technology</td>
<td>1-2/3</td>
</tr>
<tr>
<td>Lumbering</td>
<td>3</td>
<td>Camp Technique</td>
<td>1</td>
</tr>
<tr>
<td>Applied Lumbering</td>
<td>2</td>
<td>Forest Development and Policy</td>
<td>2</td>
</tr>
<tr>
<td>Forest Utilization</td>
<td>1</td>
<td>Forestry Seminar</td>
<td>1</td>
</tr>
<tr>
<td>Forest Mensuration</td>
<td>4-2/3</td>
<td>Research and Thesis</td>
<td>3</td>
</tr>
<tr>
<td>Forest Management</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forest Management and Finance</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In keeping with the customary practice at Iowa State College, much supporting work was given by other departments of the college, including such applied courses as dendrology, forest pathology, forest economics, forest entomology, forest surveying and timber testing.

Page 122 of the 1913-14 college catalogue carries a note of importance for in bold type near the top of the page we find
"Summer Camp (Three Months)". This marks the beginning of off-campus field laboratory work in forestry at Iowa State. The courses listed for the new camp program were silviculture, lumbering, forest mensuration and forest utilization for a total of eighteen semester hours credit. The catalogue states that members of the 1915 and 1916 classes would be required to attend the first summer camp in 1914 along with the class of 1917. The first camp was held in tents on Star Island in Cass Lake, Minnesota.

The writer had the privilege of being a student at Iowa State's first summer camp. The teaching staff consisted of Professors G. B. MacDonald, G. C. Morbeck (now deceased) and T. R. Truax.

In 1913 forestry freshmen continued to take a common agricultural freshman year but the last three years were in the "forestry group". Thus, after ten years the course work in forestry was completely divorced from the course outline in horticulture except for the freshman year. However, the forestry work continued to be administered by the Department of Horticulture and
Forestry with almost complete authority given to the professor in charge of forestry.

Beginning with the academic year 1914-15 the common agricultural freshman year was dropped and forestry became a complete four year curriculum with, of course, the usual supporting work. Some general forestry work was offered during the first year. In addition to the four year general forestry curriculum, the 1914-15 catalogue outlines a five year "course" with a post senior year. The fifth year permitted students to prepare especially for work in forest management, forest products, lumbering and forest protection. The degree for completion of either the four year curriculum or one of the five year groups was Bachelor of Science in Forestry. Thus, as early as 1914 attempts were being made at Iowa State College to provide some degree of specialization.

In 1917, in addition to the five year curriculum of four groups which had been listed in 1914, provision was made in the senior year of the four year curriculum for groups in forest management and lumber marketing.

The 1918-19 catalogue shows that the five year curriculum had been dropped and provision made for a year of advanced work in either of two groups, forest management and protection or lumber marketing and forest products. At the completion of the additional year, a degree of Master of Forestry was awarded.

With the 1919-20 academic year the college changed from a semester basis to a quarter basis. The change required re-alignment of courses but the subject matter presented remained practically the same as before.

In 1920 the earned degree for the year of advanced study was changed from Master of Forestry to Master of Science and research work with a thesis to report results was required. Thus, a program of forestry instruction at the graduate college level was provided at this school. At the same time, the Master of Forestry degree was retained but became a professional degree to be granted in recognition of high professional standing and to be initiated by the faculty. To be eligible the candidate was required to have undergraduate training in forestry followed by not less than five years of eminently successful experience in some phase of practical or professional forestry. The professional Master of Forestry degree was discontinued in 1936.

From 1918 until 1938 there was no major change in the curriculum in forestry. Throughout this period of twenty years forestry students upon reaching the senior year could choose work in either the forest management or the lumber marketing groups. The year of advanced study leading to the M.S. degree could be
either in forest management and protection or in lumber marketing and forest products until 1938 when forest range management was added. This marked the recognition of forest range management as a field of major importance in forestry at Iowa State.

The catalogue for 1938-39 introduced two changes of importance. For the first time an optional six week summer camp after the junior year was listed. The six week camp was inaugurated in the summer of 1939. It was located at Seneca, Oregon, and carried on through the cooperation of the U. S. Forest Service and the Edward Hines Lumber Company. To date four junior camps have been held, in 1939, 1940, 1941 and 1951. The other noteworthy curriculum change of 1938 was the elimination of the two senior year specialization groups and the provision in the junior and senior years for forty-four credit hours of elective work to be taken chiefly in one of four groups, namely;

Forestry and Conservation
Forestry and Economics
Forestry and National Forest Range Management
Forestry and Wildlife Management

This catalogue again provided for a fifth or post senior year in any one of the groups listed above. At this time some thought was given to changing the undergraduate work in forestry to a five year basis with complete elimination of the traditional four year curriculum. After much deliberation, the decision was made to maintain the four year curriculum and provide for a fifth year with several options.

The idea of a wide choice of elective credit as provided by the 1938 catalogue never worked satisfactorily and was abandoned. In 1939 a definite four year curriculum again was outlined with a limited choice of electives. A fifth year was provided with four fields of specialization in forestry and conservation, forest utilization, forestry and range management and forestry and wildlife management. The degree for the fifth year was Bachelor of Science with the field of specialization indicated.

In 1949 farm forestry was added to the five year specialization groups bringing the total to five. Other than this addition and slight changes in course content descriptions, there have been no changes of note in the forestry program since 1939.

At the present time study is being given to increasing the number of hours of elective credit, reducing the required courses and providing for two groups in the senior year patterned somewhat after the four year curriculum in operation from 1918 to 1938.

In addition to the laboratory facilities on the campus which
Laboratory facilities on the campus which are used in the resident teaching program in forestry.

are used in the resident teaching program in forestry, the department enjoys the use of several off campus properties for teaching and research purposes.

The Iowa state forest nursery of 100 acres is located about two miles from the campus. This has afforded an excellent opportunity for practical training in nursery practice and tree production.

Within easy walking distance of the campus are a five acre pine plantation and a 130 acre hardwood area both of which are used as field laboratories for forestry classes. In nearby Boone County lies the Holst State forest of about 300 acres which is managed by members of the student Forestry Club.

The State Conservation Commission has designated the Stephens State forest in south central Iowa as a school forest.

Research in forestry was given a lift when, in 1949, the late Emma Brayton of Manchester, Iowa, bequeathed to the college for forestry purposes the 305 acre Brayton Memorial Forest in Delaware County. This hardwood forest is being developed as a research and demonstration area. The 1951 Junior Summer Camp was held on the Brayton forest.

Thus, facilities for a better teaching and research program
in forestry have improved a great deal since the inception of professional forestry training at the Iowa State College.

ADMINISTRATION AND STAFF

Shortly after a course in forestry was offered for the first time, Prof. J. L. Budd took charge of the work in horticulture. He did much to promote interest in forestry. We read in an article in the "Ames Forester" of 1923 written by Dr. L. H. Pammel and Roland Rotty that when Professor Budd retired, forestry instruction was carried on by Professors John Craig and A. T. Erwin in a most admirable manner.

During the administration of S. A. Beach as head of Horticulture and Forestry, the work in forestry reached professional status, as previously indicated, with the employment of Hugh P. Baker to direct the work in forestry. Professor Baker had received training at Michigan Agricultural College. After leaving Iowa State, Baker taught at Pennsylvania State College and the New York State College of Forestry before becoming president of the University of Massachusetts.

It is impossible in an article of this length to tell very much about all who have served on the forestry staff at Iowa State. However, some mention should be made of those who have directed forestry and of those who have carried on teaching work in this field.

When Professor Baker left Ames, he was succeeded by Prof. C. A. Scott. After several years at Iowa State, Scott resigned to accept a position with Kansas State College. As later years proved, the Iowa State College was most fortunate in the choice of a man to replace Professor Scott. The man selected was a young graduate from the forestry curriculum at the University of Nebraska in the person of G. B. MacDonald. He took charge of forestry at Ames in 1910 and for a period of thirty-eight years directed with vigor, wisdom and efficiency the Iowa State College forestry program of resident teaching, extension and research. In 1914, Nebraska granted a Master of Science degree to Professor MacDonald and honored him in 1947 with the degree of Doctor of Agriculture. It was under Professor MacDonald that the work in forestry at Iowa State College attained a position of prominence in American forestry circles. In addition to college duties, Professor MacDonald has had many other interests. He has served the State of Iowa as director of the State Civilian Conservation Corps program from 1933 to 1937 and as state forester, a post he now holds. Also, at present, Professor MacDonald is a member of the Secretary of Agriculture's three-man National Forest Advisory Council.

Ames Forester
In keeping with college policy regarding retirement, Professor MacDonald relinquished his duties as administrative head of the Department of Forestry on July 1, 1948. A member of the forestry staff, George B. Hartman, was appointed to assume the headship of the department.


In 1925 the forestry work at Iowa State was faced with perhaps the most critical situation in its long history when the State Board of Education, as an economy measure, proposed the abolition of degree courses in both forestry and technical journalism. Dr. Ross in his history of Iowa State College writes, "either by remarkable prescience or a lucky hunch, the President (Pearson) was firmly convinced that these particular fields had great future promise—and sought to build them up". Eventually the recommendation regarding forestry was rescinded. Since 1925 no apparent thought has been given to discontinuing forestry training at the Iowa State College. President Charles E. Friley has stated that the Iowa State College is committed to a program in forestry directed toward the improvement and development of the woodlands of Iowa and toward the adequate training of young men for work in professional forestry. He has backed this statement with support in various ways.

The work in forestry through the years has enjoyed the support of the deans who have directed the Division of Agriculture, first C. F. Curtiss, then H. H. Kildee and, since 1949, Floyd Andre. Prior to coming to Iowa State Dean Andre served as chairman of a North Central Regional Forestry committee. He is a strong supporter of our forestry program as also are members of his administrative staff.

Until 1946, forestry continued as a sub-department of Horticulture and Forestry. In that year the work in forestry was given full departmental status and Professor MacDonald became department head rather than a professor in charge of a curriculum.

RESEARCH

The Agricultural Experiment Station was created in 1888 to conduct research in the agricultural fields but not until 1909 did forestry research come on the scene. The college catalogue for
1909-10 on page 127 states, "the work of the Experiment Station has been increased by the addition of Forestry as a line of investigation" and the statement continues to mention several research problems to be attacked. Research has been an important function of the department since that time. In addition to college funds devoted to forestry research, the department, through the Agricultural Experiment Station, cooperates with the State Conservation Commission and the U. S. Forest Service in pursuing research studies in forestry.

EXTENSION

According to Dr. Earle D. Ross, the Extension Service was organized as a department of the college in 1906. During the early years of extension efforts at Iowa State College, the needs of forestry were handled by men trained in horticulture. With the employment of I. T. Bode as extension forester in 1921, an active program in forestry extension was begun. Bode served ably in this capacity until his resignation in 1932. Since 1932, forestry extension has been in the hands successively of Guy R. Ramsey, Odell Julander and Richard B. Campbell with assistance for periods from R. B. Grau, Truman Engelking and E. T. Gardiner. The untiring efforts of our extension foresters have done much to popularize forestry in Iowa.

STUDENT BODY

As a result of the public interest created in forestry and conservation by the Civilian Conservation Corps camps of the early thirties, the enrollment in forestry increased to reach a peak of 325 in the fall of 1937. The number of students dropped to a low of 31 in 1944 when calls to the military services depleted the student body ranks.

After World War II a sharp rise in student numbers was experienced, reaching a peak of 385 in the fall of 1947. Since then there has been a gradual reduction in the number of forestry students. The fall of 1951 finds the department with an enrollment of 173 undergraduate forestry students.

The forestry student body is an important part of the Iowa State College. In point of enrollment, the department has ranked among the top four departments in the Division of Agriculture each year since 1935. For the 1951 fall quarter the undergraduate enrollment in forestry is 14.2 percent of the total student body in agriculture.
ALUMNI

Since the college began professional training in forestry in 1904, degrees have been awarded as follows:

<table>
<thead>
<tr>
<th>Degree</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Science</td>
<td>891</td>
</tr>
<tr>
<td>Master of Science</td>
<td>54</td>
</tr>
<tr>
<td>Master of Forestry (professional degree)</td>
<td>12</td>
</tr>
</tbody>
</table>

The forestry graduates of Iowa State have remained for the most part in the field of their training. The records indicate that just slightly under 75 percent are engaged in forestry or in work very closely allied to forestry. Among the alumni are many leaders in state and federal forestry work, in the forest industries and in the field of forestry education.

Within a couple of years, professional forestry training at Iowa State College will have reached its fiftieth year. Throughout those fifty years the college has endeavored to provide a curriculum which would offer to the students who attended this school a well rounded training in forestry and the sciences basic to it. The achievements of the alumni indicate that the efforts of the college have not been fruitless. The department plans to continue to offer a strong fundamental training with such changes in curriculum and courses as may be necessary to meet shifting conditions. If the graduates in the years to come contribute to the profession of forestry in the same degree as those of the years since 1904, the Iowa State College may look with pride to the part it has played in the advance of forestry in Iowa and in the nation.

Nov. 28, 1951.

REFERENCES


IOWA STATE COLLEGE — Iowa State College bulletins, Iowa State College, Ames, Iowa, 1909-1951


OUR AUTHOR

George B. Hartman was reared in Eddyville, Wapello County, Iowa. He attended the Iowa State College and was graduated from the curriculum in forestry in 1917. In 1941 he was granted an M.S. degree (major in forest utilization) from the Iowa State College. He is a member of
Alpha Zeta, Gamma Sigma Delta and Phi Kappa Phi honor societies.

Mr. Hartman served with the Twentieth Engineers (Forestry) during the first World War. From 1919 until 1935 he was associated with the Long-Bell Lumber Company (Wood Preserving Division) at De Ridder, Louisiana, in various capacities last of which was plant superintendent. He was employed by the same company again in 1947-48 as assistant manager of the Hudson River Division at De Ridder, Louisiana.

From 1935 until 1947 he served on the staff of the Department of Forestry of the Iowa State College as professor of forest utilization. He returned to the College in 1948 to assume the duties of department head.

Mr. Hartman is married and has a daughter and two sons. He is a member of the Society of American Foresters, the American Wood Preservers Association and the Iowa State Historical Society.