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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

NOTES ON CHARLES EDWIN BESSEY AT IOWA STATE AGRICULTURAL COLLEGE

(February, 1870 until November, 1884)

Charles E. Bessey, aged $24\frac{1}{2}$ years, graduated from Michigan State Agricultural College (as the name was then) in November, 1869. He was immediately given an appointment in the Department of Botany (which at that date included all plant sciences; Botany, Horticulture, Forestry and much of what is now Farm Crops). A greenhouse had just been built and he was given the task of getting the plants growing in readiness for the opening of the college at the end of February. In December, 1869, a tall man with an ample gray beard came to the greenhouse and sought him out. He introduced himself as President Welch of Iowa State Agricultural College (its name at that time). He said that President Abbot had recommended Mr. Bessey to him as a good man to fill the new position to be established at Ames of Instructor in Botany and Horticulture. They talked the matter over for an hour or so and when President Welch left he indicated that he might be heard from soon. About a month later came the offer of the instructorship in Botany and Horticulture at the then rather good salary of \$1000 per annum, an offer that was promptly accepted.

On his arrival at Ames in February, 1870, C. E. Bessey was given residence in a room in the Old Main Building, taking his meals in the mess hall with the students and the other unmarried members of the faculty. He was assigned an office and one or two class rooms at the south end of the hall on the second or third floor of the same building. The department at that time possessed no compound microscopes and he persuaded President Welch to purchase one, which I believe is still in existence. A few small dissecting microscopes were also soon obtained. At any rate in that first year he shocked the rest of the faculty by tacking a sign on a classroom door reading "Botanical Laboratory". The other members of the college staff said that the name laboratory belonged to the Chemistry Department, but in spite of this objection the

name remained for the Botanical Department, as well. For several years the beginning course in Botany was not listed in the catalogue as a laboratory course although actually the students studied plant material under dissecting microscopes and performed what we now recognize was really laboratory work. The advanced students in Botany used the compound microscopes to which others were gradually added. In his first class was found a sophomore (I believe) named Joseph Charles Arthur, who nearly sixty years later informed the writer that actually laboratory work was carried out in the year 1870.

Besides the classes in Botany C. E. Bessey had to teach classes in Horticulture and to organize and carry out practical demonstrations as well as experimental work in that field. After two years there was a political upheaval on the Board of Trustees and J. L. Budd was made Professor of Horticulture and C. E. Bessey became Professor of Botany and Zoology (including Entomology).

In 1872 Professor Bessey met the famous Harvard botanist, Asa Gray at the meeting of the American Association for the Advancement of Science at Dubuque, where Dr. Gray gave an address as retiring president of the Association. This was his first meeting with the famous botanist. As a result he arranged to spend his winter vacation in 1872-1873, studying under Gray at Harvard. This was repeated in the winter of 1875-1876. The friendship between the older and the younger man continued until the death of Gray in 1888. When, about 1878, the publisher Henry Holt sought an author for the Textbook of Botany in his proposed American Science Series he naturally turned to Dr. Asa Gray for advice and the latter promptly suggested the name of Charles E. Bessey. Thus came about the series of several editions of Bessey's Textbook of Botany and the smaller Essentials of Botany, both of which had their first appearance while their author was still at Ames.

In the first ten years of his residence at Ames, Professor Bessey did extensive collecting of plants and established a herbarium at the College. It must be noted that he collected not only vascular plants but also mosses, Algae and Fungi, an unusual practice for herbaria in this country at that time. As early as 1871 in

a report of the Agricultural College (No. 17, pages 89-127) he published a paper entitled Contribution to the Iowa Flora. This was based mainly upon his own collections, assisted by J. C. Arthur, and with the cooperation of four other interested persons in different portions of the state. His added burden of Entomology compelled him to devote much time for several years to studies on the insects of Iowa, particularly on those that were harmful to plants. This burden became less by the aid of a young student, Herbert Osborn, who eventually became Professor of Entomology. In the 1873 and 1874 Reports of the Iowa State Agricultural Society are published Professor Bessey's Reports on Insects.

As time went on Professor Bessey became more and more interested in the diseases of plants. In the Agricultural College Report printed in 1877 appeared his paper entitled "On Injurious Fungi. The Blights (Erysiphei)". Several other botanical papers, partly of physiological nature were published in the Transactions of the Iowa Horticultural Society in the years before and after 1880. One of these papers in the 1883 number is entitled "The Diseases of Plants" and may well be the first pathological paper from the College.

With the erection in 1880 of North Hall the Botanical Department was removed from the Main Hall and given much more commodious quarters. In a note by him concerning this event, in the March, 1881, number of the American Naturalist it is stated that "A large lecture-room is supplemented by a laboratory adjacent to it. The latter is constructed with north and east windows for microscope work. A third room of ample size is set aside for the herbarium and cabinet."

In 1880 he accepted the task as botanical editor for the American Naturalist to which he had contributed a number of short papers in the preceding years. He prepared monthly notes for that journal for quite a number of years beyond his years of service at Iowa Agricultural College. Feeling the need in Iowa of such

an organization he took active part in the organization of the first Iowa Academy of Science, of which he became president.

In 1874 he was invited by President Gilman of the University of California at Berkeley to deliver a course of lectures and organize classes in Agricultural Botany during the long winter vacation at Ames (November, 1874 to February 1875). Accompanied by Mrs. Bessey he took train to California, missing by one day a terrific blizzard that tied up traffic a week or more. He arrived at Berkeley just as Dr. Gilman was leaving to assume the presidency of the newly established Johns Hopkins University in Baltimore. The botanical courses that winter at Berkeley were the first ones given at the rather new University of California.

In July 1881, upon invitation from the University of Minnesota, he gave courses in Botany during the summer session of that institution. As there were no compound microscopes there he was permitted to borrow from Iowa Agricultural College twenty-five. He used these in conducting the first laboratory courses in Botany ever held in Minnesota. In 1882 J. C. Arthur conducted a similar course there.

Professor Bessey was always interested in the problems met by teachers and early associated himself with the Iowa State Teacher's Association. He was anxious that college courses and the high school work leading toward the college be placed on a more scientific basis. At the meeting of the Association at Grinnell on December 26, 1876 he gave a talk entitled "A Study for a Course of Training in Science". The proposed course was intended to continue for eight years beyond the eighth grade of elementary school. He suggested that the first four years should be given in high school, but because there were very few four-year high schools in Iowa at that time some of this work would have to be done in the earlier years of college. Reflecting the prevalent tendency then, the proposed course was a fixed one, with practically no opportunity for deviation or for electives. Influenced probably by the insufficiencies that he felt in language training, which made it necessary for him to spend much time and labor so as to learn to read the botanical and other scientific litera-

ture in Latin, German and French he recommended in his proposed course of study two years each of Latin, German and French and a year of Greek, a year of English two years of English Literature, one year of Science of Language, one year of Logic, one year of History, one year of Biology. Then in the purer sciences: he lists one year of Algebra, one of Geometry, one of Trigonometry, one of Analytical Geometry and one of Calculus. With these firm foundations of language and mathematics came the following sciences: six years each of Botany and Zoology, two years of Chemistry and Physics, followed by four years each of Chemistry and of Physics. Concerning the teaching of Botany and Zoology he wrote "For the preliminary years the method is that of learning from Nature, under the guidance of the teacher. The teacher must exercise an intelligent discretion; too little help given the pupil is often as bad as too much." With such a course, had it ever been given in any college the student passing through it would have been equipped with a thorough training which would have enabled him to go far in whatever Science he chose as his specialty. Even now there is scarcely anywhere a high school-college combination that would go so far as that outlined. (Author's note: When it became apparent to my father that I was intending to make Botany my chosen field he guided my studies so that in high school and college together I had six years of Latin, over four of Greek, two each of German and French and one of Italian. This foundation in languages has been of incalculable assistance to me in my botanical work.)

While Professor Bessey was still a student in his Junior year at Michigan State Agricultural College, President Abbot called him to his office for a conference. He said "Prentiss (who was head of all the botanical work at the college) says you ought to become a Botanist". He answered, "But I came here because I wanted to learn more Civil Engineering". Abbot answered, "Prentiss says that your keenest interest and best work is in the field of Botany. Go, think it over and come back and tell me your conclusions". After considering the matter some days he realized that Prentiss was really right and he told President Abbot so. The latter said "Bessey,

I am glad of it, but you will ~~never~~ be rich". I have heard my father repeat this story many times but he always insisted that Abbot was wrong, for though he never became rich in money or goods he had great wealth in the love and admiration of his hundreds of students and scientific friends.

On Christmas Day, 1873 he married Lucy Athearn of West Tisbury, Martha's Vineyard, Massachusetts, whom he first met when she was teaching music in the Lansing, Michigan, Academy of Music in 1868. For about a year they lived in the old Main Hall, but upon their return from California early in 1875 they moved into a house in Ames. There were born their three sons, Edward, in June, 1875, Ernst, in February, 1877 and Carl in August, 1878. Edward and Carl became electrical engineers, but only Ernst felt the desire to follow the field of Botany. In March, 1882 the family moved into what was then called South Hall on the Campus. Part of the house was reserved for the classes in Home Economics and often we, upstairs, could smell the delicious odor of baking.

April 8, 1882 was the day before Easter Sunday. As was the custom all the students were to attend chapel exercises in the Main Hall, at 5 P.M., including Saturday. The conducting of these exercises was rotated among the faculty. My father was very busy in his office in North Hall and did not expect to attend chapel, but only a few moments before five he was sent for as the professor who was slated for the job was taken ill. So my father went over to President Welch's office preparatory to entering the chapel. A sudden storm of rain and wind came up and was followed by a tornado passing up the center of the campus. It hit North Hall and dumped several tons of brick and other debris on the desk and office chair where my father had been sitting not ten minutes before. My mother had gone to Ames by the morning bus to do some shopping and to visit her friends. She was on the bus returning to the college and they had just crossed "College Creek" and driven up the hill near South Hall when the bus was torn to pieces by the tornado

and the kitchen wall of the South Hall blown out and all chimneys taken off and deposited upright on the ground north of the house. Although badly banged up, her injured did not shorten her life greatly as she lived to the age over eighty-two.

Early in 1884 the University of Nebraska sought to take Professor Bessey away. He was reluctant to accept the call but finally the offer was so attractive that he accepted and resigned to take effect at the close of the college year in November, 1884, after the completion of fifteen years at Ames. He always retained great interest and affection for Iowa Agricultural College and rejoiced to see it grow and prosper.

Professor Bessey was a religious man. Like his beloved teacher, Asa Gray, he retained his religion while at the same time accepting the belief in Evolution.