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## Ada Hayden: A Tribute

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## Ada Hayden: A Tribute

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Dr. Ada Hayden was a member of the Iowa State College of Botany faculty, 1920-1950. Her floristic studies of the lake region in northern Iowa are possibly the most authoritative for any part of the state. Hayden was curator of the Iowa State herbarium, 1934-1950, and contributed immeasurably to its development. This research facility has recently been named the Ada Hayden Herbarium. In the sense that L.H. Pammel was father of the Iowa State park system, her bequest is the state preserves. After some 25 years as a conservation activist, she published descriptions of 22 prairie areas in ten counties that deserved preservation. That paper remains a reference for current conservationists.

INDEX DESCRIPTORS: Iowa, Iowa Flora, Ada Hayden, conservation, herbarium.

Recently (1986) in the Iowa State University Botany Newsletter, Prof. R.W. Pohl wrote "We just visited the Mayo Clinic. On return we stopped by the Hayden Prairie, Howard Co. You can't get there from here. The marker on the highway is non-informative and the road is closed. We got there by a roundabout route. There is a sign identifying 'Hayden Prairie', and a rock indicated that some federal agency has recognized the site. Nowhere is there any indication of who 'Hayden' is or was, or why the person should be recognized. I think this is a shame!"

That prairie was named for Dr. Ada Hayden, a member of the faculty of the department of Botany at (then) Iowa State College, 1920-1950. The "shame" expressed by Dr. Pohl is now reduced by the appearance of an attractive popular article in *The Iowan*, entitled "She fought to save Iowa's prairies," the "she" being Hayden (Lovell 1987). This subsequent essay about her life and achievements is directed further to rescue her from anonymity. Because we presently also honor Hayden in naming the Iowa State University Herbarium for her, a brief historical account of that facility and her stewardship is included here.

### SOURCES OF DATA

Although the Iowa State University archival holdings concerning Dr. Hayden are not extensive, they serve as the major source of information for this biographical summary. Further information has been obtained from the Iowa State University herbarium files. The only published discourse I have seen, prior to the Lovell article, are two obituaries (Martin 1951, Newcombe et al. 1951), one including Hayden in a paper on woman scientists in the Iowa Academy of Science (Tiffany 1975), and reference to Hayden in a biography of L.H. Pammel, who was Head of Botany, Iowa State College, 1889-1929 (M.C. Pohl 1985, p. 29). Certain additional information concerning Hayden's career was obtained from a library file of Iowa State catalogues and directories. The professional lives of three of us (R.W. Pohl, L. Tiffany, and D. Isely) briefly overlapped that of Hayden and our remembrances contribute some details.

### HAYDEN: VITA

Ada Hayden was born on a farm near Ames, Iowa in 1884. She came to Dr. Pammel's attention while still in high school, and he was evidently instrumental in her going to Iowa State College and majoring in Botany. She graduated in 1908 after also serving as a laboratory instructor for two years. Then she went to Washington University in St. Louis, and obtained a Masters degree in 1910. Her thesis was an annotated enumeration of the algae on the grounds of the Missouri Botanical Garden. Her close relationship with Pammel is evidenced by a file of numerous letters that she wrote to *The Doctor* during the two years she was away from Ames. On return she wished

to continue her studies at Iowa State. Pammel, however, thought she should go to the University of Chicago for her doctorate. She deferred to his wishes in initiating study in Chicago, but then returned to Ames in the role of an instructor (initially so listed in 1911) and a graduate student. She received her Ph.D. in 1918, the first woman to obtain this degree at Iowa State, and indeed the fourth among either gender. Her dissertation concerned ecological adaptations of prairie plants; it was subsequently published in the *American Journal of Botany* (Hayden 1919c, 1919d).

Degree in hand, after considering at least one opportunity to go elsewhere, Hayden elected to accept a position with her alma mater and was appointed Assistant Professor of Botany in 1920.



Fig. 1. Ada Hayden. Perhaps at age of 18-20.

Dr. Hayden's primary direct responsibilities, 1920-1934, presumably were in teaching. One uses the word 'presumably' because there is no evident record of her assignments during that period. But there would have been plenty for her to do! The Botany faculty, immediately prior to Hayden's appointment, included four other Professors (Pammel, Martin, Melhus, Bakke) and two to four instructors, and so it remained for several years. The 1918-1919 Catalogue lists 51 botany courses exclusive of seminars and research. Unfortunately for the historian, the instructors for individual courses are not named in this or subsequent catalogues. One guesses that she taught or shared with Pammel, courses in ecology, taxonomy, and, under the heading "Industrial Botany," offerings such as economic botany, poisonous plants, weeds, and honey plants.

In addition to her teaching, Hayden published sporadically on miscellaneous topics, mostly supportive of Pammel's interests (e.g., honey plants, pollen, weeds, flora of Iowa), and participated in the preparation of extension teaching materials. She contributed, through active plant collecting, specimens that were added to the holdings of the Iowa State Herbarium. She collaborated with and assisted Pammel, both in text and illustrations, in several of his major books. In 1934 she succeeded R.I. Cratty as Curator of the Herbarium. Possibly her official title was Assistant Curator part of this time, but functionally she was the Curator.

Dr. Hayden published four pages about prairies (Hayden 1919a, 1919b, 1919c, 1919d) early in her professional career. Otherwise, her role as conservation activist scarcely surfaces until the early 1940's when it began to bear visible fruit. I will discuss this in a later section of this paper.

In or slightly after 1934, Ada Hayden's appointment was changed from teaching to research in the Agriculture Experiment Station. The reasons for the change are speculative. Possibly the station desired to investigate wetland resources (stimulation from hunting interests?) and Hayden was both qualified and interested — she would not have taken well to an unpalatable assignment. In any event, relieved of teaching duties, she concentrated on a study of the flora of the lake region of northern Iowa, and published a major paper concerning it (Hayden 1943).

During the last ten years of her life, Dr. Hayden vigorously continued these floristic studies, as well as the management and development of the herbarium, and as a protagonist for the establishment of prairie preserves. She participated in the Ecologists Union, the Iowa Academy of Science and the Grassland Research Foundation, and was secretary of the latter from some years. Hayden received *The Iowa Conservation Hall of Fame Award* from the Iowa Chapter of the Wildlife Society in 1967. Further recognition was delayed some 20 years until recently she was chosen as the subject of the formal address at the annual meeting of the Iowa Natural History Association in 1987.

#### ADA HAYDEN — THE PERSON

The "worthy Ada," as some called her, was a short (5'-2"), strongly built woman. When I knew her she was grey-haired, walked with a sprightly step, and was decidedly a personality with a quick and often tart tongue. It is said that she was a bashful person when young; she assuredly had been cured when I knew her. Seemingly, she was viewed by the department with a mixture of high esteem and amusement. She has been described as determined, fearless, independent, brusque and eccentric. While the borderline between individualistic and eccentric is nebulous, the latter is perhaps supported by verbal history, especially in the form of numerous apocryphal stories. But because these tend to grow beyond the original dimensions following retelling over the years, their reproduction here would possibly be misleading. Lovell (1987) has briefly described one incident that I related to her on the phone.

Certainly a distinctive Hayden trademark was her independence. Apparently most of her field work was *en solitaire*. In a day when women did not do some things, she loaded her boat for her field work on top of the car herself, and hauled it north for the summer. And the reverse as necessary. The boat, resting in a back alcove of (now) "Old Botany" during the winter, was an integral part of the scenery of that building for some years.

Dr. Hayden was diversely talented and skilled. Professionally, she was a knowledgeable floristic botanist and ecologist. It is evident that she was both an excellent photographer and an artist in her own publications and her contributions to those of Pammel. She wrote poetry. At the time I knew her (1944-1950) she was outspokenly and emotionally dedicated to the prairie effort. Commonly less than a diplomat, she was possibly most convincing to those already convinced. Consequently, her firmness of purpose, knowledge, and persistence were especially effective in a team effort. There, they more or less automatically rendered her a leader.

#### RESEARCH AND PUBLICATION

Hayden carried her admiration of Pammel to the end of her days and could not abide an unkind word about him. For this reason and perhaps others, her scientific work mostly falls into two categories: (1) that of the first half of her career, as a collaborator and assistant to Pammel, and (2) that of her own design.

On the first: Hayden and Charlotte King, also of the Iowa State College, Botany staff, surely played an important role in *The Professor's* phenomenal productivity. While verbal history of the level of their participation may be magnified, it is probable that they contributed to all of his major works, some ten books in all (M.C. Pohl 1985). I here provide examples of acknowledged record in three of Pammel's books.

The monstrous *Poisonous Plants* (Pammel, 1911). Though dated as cited, the Foreword was written in 1909 — presumably the book was two years in press. It includes some Hayden drawings. In 1909 she had barely graduated from college. Evidently she was put to work early.

*The Weed Flora of Iowa* (Pammel and King, 1926). Hayden contributed one chapter and miscellaneous photographs and a few drawings.

*Honey Plants of Iowa* (Pammel and collaborators, 1930). Hayden wrote five chapters and furnished perhaps 100 photographs for illustrations.

Regarding Hayden's own research, I suppose her output by present day standards is not exciting — professors were then teachers, and the level of publication imperative was not as at present. The total is some 29 papers, about half being short notes. She wrote about anatomical adaptations of prairie plants (Hayden 1919c, 1919d; her doctorate dissertation), additions to the Iowa flora (e.g. Hayden 1945), weeds (e.g., Hayden 1934), pollen (e.g. Hayden 1930), and other miscellaneous topics. Two later papers overshadow the remainder. One relates to the preservation of Iowa prairies, here discussed in a subsequent section, the other, a floristic study of a part of the northern Iowa Lake region (Hayden 1943) derived from her Experiment Station research. Specifically, this was a flora of Clay and Palo Alto counties. I suggest that it is possibly the best published native flora survey, to present date, of any part of Iowa. Much of it one can consider as floristic taxonomy, the central core being an annotated checklist. But it goes well beyond that. There are, for example, sections on the floristic attributes of the region, its physiography, and the interrelationships of the various plant communities. There is some emphasis on the aquatic habitat. Though the specific object is these two Iowa counties, the substance is broader. The paper is an important historical document for Iowa and the midwest.

But I am puzzled. This report was published in 1943, presumably

representing work done during the eight year period, 1934-1942. However, for the remaining seven years of her active life, Dr. Hayden continued to spend her summers in northern Iowa, and one might well have expected further published accomplishments. There are none, nor are there preliminary or incomplete manuscripts in the archives. The answer possibly is that by the 1940's when her earlier efforts in prairie conservation were beginning to bear fruit, the writing part of her research was deferred. Likely, most of her resident time at the college was devoted to the preserve effort and the continuing demands of the herbarium. Or perhaps she had initiated further floristic or ecological reports, but completion was defeated by her untimely death, and the material was lost.

### THE IOWA STATE UNIVERSITY HERBARIUM

Although the herbarium was founded by the famed botanist, C.E. Bessey, ca. 1870 (Mertins and Isely 1981), it was Pammel who built it to respectable proportions. He was an avid collector both in Iowa and elsewhere in the United States, especially in expeditions to the Rocky Mountains early in the 20th century. He evidently also initiated some kind of an exchange program (multiple specimens of one accession being traded for duplicates from other herbaria). But Pammel did everything rapidly. The quality of most of his gatherings is poor, and supporting label information is usually limited to locality and date, these sometimes approximations. A Pammel coup, however, was the employment in 1918 of R.I. Cratty as Curator of the Herbarium. Cratty was a retired school teacher and farmer from Armstrong, Iowa, who had been publishing on Iowa flora from the turn of the century (e.g. Cratty 1898, 1904). While at Iowa State, Cratty prepared a checklist of the plants of Iowa (Cratty 1933) and was also president of the Iowa Academy of Science, 1925-1926. Upon his second retirement in 1934, he was succeeded by Hayden as Curator of the Herbarium, who, for the next 16 years vigorously developed this research resource as described in the next section. Dr. George Goodman, taxonomist on the faculty 1936-1946, possibly was official curator during his tenure at Iowa State. If so, he evidently left its operation mostly to Hayden and she was functionally the curator.

A major acquisition in 1940 was the J.P. Anderson Alaskan herbarium. Anderson, educated at Iowa State (BS 1913; MS 1916) went to Alaska and opened a florist business in Juneau. He was sufficiently successful that he was able to spend much of his time for 24 years studying and collecting the flora of that U.S. territory and adjacent Canada. He was awarded an honorary doctorate by the University of Alaska. On retirement in 1940, he returned to Iowa State, complete with a herbarium of ca. 10,000 specimens to write a Flora of Alaska. A preliminary edition was published in sections in *The Iowa Journal of Science*, which, subsequent to Anderson's death in 1953, were assembled by Dr. R.W. Pohl into a single text (Anderson 1959). The Alaskan holdings were subsequently further expanded by Dr. S.L. Welsh, who used the collections as the basis of his *Anderson's Flora of Alaska* (Welsh, 1974).

There is no evident record of the role that Dr. Hayden played in the decision of Dr. Anderson to return to Ames, and the consequent acquisition of his collections. I suspect that her promulgation was behind the scenes and internal, the affirmative response being an administrative one by the department.

Upon Dr. Hayden's death in 1950, Dr. R.W. Pohl, who succeeded Goodman, assumed the post of curator, which he held until his retirement in 1986. During his period of incumbency the herbarium grew vigorously, particularly in its holdings of United States and Central American grasses, and in Dr. Duane Isely's collections of Leguminosae.

In 1984, a full time position was established for an Assistant Curator, which was filled by Ms. Deborah Q. Lewis, trained at the University of North Carolina. In 1984 also, Iowa State University accepted on permanent loan the important mycological (fungus) collections from the State University of Iowa.

Upon Dr. Pohl's retirement, Dr. Isely assumed faculty responsibility for the Herbarium.

### THE ADA HAYDEN HERBARIUM

In September 1987, acting on a proposal by Isely, the faculty recommended that the herbarium be named in honor of Dr. Hayden. Administrative approval for this designation was received in January,



Fig. 2. Ada Hayden (middle in back) as I (Isely) knew her: Short, erect, one arm akimbo, grey-hair covered by field hat. The man on the left, incidentally, is the famous geneticist-systematist, Edgar Anderson. Reproduced from *Annals Missouri Botanical Garden*, 59:363. 1972.

1988.

The identification of a herbarium with a major figure in its genesis is not an unusual procedure. The best known is The Gray Herbarium (for Asa Gray) of Harvard University, often colloquially just called "The Gray." Two other examples are the C.E. Bessey Herbarium at the University of Nebraska and the Marion Ownbey Herbarium of Washington State University.

One may reasonably inquire, in view also of the major contributions of both Pammel and Pohl during their long and fruitful incumbencies, what was the basis for identifying the herbarium with an almost forgotten individual? In a certain context it might be said that this alone could be a substantive basis; i.e., both of the first named individuals have been recognized and honored in several ways. Hayden, on the other hand has been overlooked by posterity. But that is not the reason. Hayden is here recalled and honored for (1) her direct hands-on building of the herbarium, (2) her outstanding Iowa floristic studies, and (3) her role as the pioneer in the preserve idea in Iowa.

With respect specifically to the herbarium, as defined in terms of single-handed acquisition, Hayden possibly stands supreme. Perhaps Pammel contributed more individual collections than did she, but if quantity and quality both are considered, Hayden is clearly his superior. By this I mean that her specimens were carefully prepared and immaculate. The labels contain careful notes on features of the plant often not easily discernible from the dried preparation, e.g. flower color, details of flower form not easily reconstructed from the specimen, and habit of the plant. And she usually included habitat and ecological notes. Furthermore, she aggressively collected in multiple, using the numerous duplicates in exchange for specimens from elsewhere in the United States and the world. Unlike Pammel, Hayden would not add specimens of dubious scientific value to the collection. In an undated herbarium report she refers to "discarding annually bushels of improperly cured and undocumented material brought in by untrained collectors." The latter years of her life were devoted primarily to the herbarium and the prairie preserve activity.

Funding available for maintenance and growth of the herbarium was minimal. During the years when NYA (National Youth Administration) and WPA (Works Progress Administration) help was available, Hayden successfully solicited technical assistance. If no one was available she did the job herself, no matter how trivial or routine.

### HAYDEN THE CONSERVATIONIST

Hayden grew up with access to native prairie, fell in love with it, and was faithful to the end of her days. She studied prairie plants for her doctorate (Hayden 1919c, 1919d), and two other early papers (Hayden 1919a, 1919b) deal with the prairie. The first is an excellent ecological-floristic classification of prairie "formations" in Iowa. The second is a short semi-poetic statement about the beauty of the primeval prairie and need for conservation, e.g. "The prairie flora is an inspiration to men and most prized when gone forever." Obviously, Hayden was early a knowledgeable spokesman for Iowa as it was. But the archival records are silent about conservation activity on her part for some 20 years, until indeed the time of the preservation of prairie areas in Howard and Pocahontas counties in the early 1940s, which was credited primarily to her by Martin (1951; Martin incorrectly said the latter site was in Calhoun County). These first two preserves were later named the Hayden and the Kalsow prairies.

What had Hayden been doing the prior 20 years that brought this about? Lacking information, I speculate. Hayden had been advocating prairie preservation this entire time, but at least a decade was required for her evangelism to begin to bear fruit. She had witnessed and taken part in the efforts of Pammel and MacBride in the establishment of the Park system in Iowa. But the preserves objective was one more arduous than that of establishment of state parks. For

the parks were public places where one could get away from it all, with the attendant attractions of picnicking, camping, fishing, boating, and so on. The prairies were just spots of grass and flowers (or weed patches in the eyes of some beholders) without even a place to sit down. The case for the prairie preservation had to be made on bases beyond those for the park system.

Sometime during this period, Hayden prepared a set of lantern slides pictorializing the beauty of the unsullied prairies. These were made from black and white photographs which she colored. She was asked how she did it. She reportedly answered that it took 15 brushes, 12 colors, and three weeks of midnight oil. Presumably these slides were extensively used for public presentations; sadly they no longer seem to be in existence.

Hayden abruptly comes to light in the middle 1940's. She was a member of an Iowa Academy of Science conservation committee, that, among other assignments, undertook the task of surveying prairie remnants in the state and making recommendations concerning preservation. It seems that Hayden did most of the work. At the Academy meeting in 1944, she presented a historical analysis of the park and preserve effort (Hayden 1946a). She followed this with a paper (1946b) on criteria for prairie preservation, which includes also a now classic descriptive analysis of the primeval Iowa vegetation. Then come the *Progress report on the preservation of prairie* (Hayden 1947), which remains a basic reference for current conservation efforts. Here, the author describes, with voluminous photographic illustration, some 22 prairie tracts in ten counties. Data included for each are location (with maps), legal description, geology, topography, floristic description, and history. The paper lacks only the glow of the admirable original pictures (somewhat dimmed in publication), which are preserved in a manuscript copy in the Iowa State Library archives.

The heritage of Hayden's pioneer efforts is reflected both directly and indirectly in the establishment of the State Preserves Advisory Board in 1965. This separate state agency is closely associated with the Department of Natural Resources (formerly the State Conservation Commission), and consists of six members appointed by the governor, with the Director (DNR) serving by statute. The State Preserves Advisory Board is functionally operated from the Bureau of Preserves and Ecological Services, which also includes the four staff-members of the Iowa Natural Areas Inventory. The Code of Iowa allows the DNR to hire one employee to assist the Preserves Board in carrying out its program. Dr. Dean Roosa, State Ecologist since 1975, has assisted the board in this capacity.

### SUMMARY OBSERVATIONS

The first part of Hayden's career was passed under the vast shadow of Pammel. During this time, she materially contributed to his voluminous production. After his death, one can antithetically state that she declared her independence, or, rather, that she was determined to carry on his tradition. Probably a bit of both. In certain ways she both excelled the master and went beyond him. Hayden effectively developed the herbarium especially in quality of holdings, and in its expansion as a research resource with holdings from the entire United States. She produced a model floristic study (Hayden 1943), a kind of an effort Pammel never attempted. In conservation, Pammel and Hayden were hand in glove, but I reiterate that the preserves idea, lacking the public appeal of the parks, was a greater achievement than the park system.

Most of Hayden's efforts were devoted to the state of Iowa, which she loved and which paid her salary. Thus many will undoubtedly say she was a parochial botanist. True, but are we not all professionally parochial in certain ways?

Hayden was plainly an aggressive person, but evidently rarely so on her own account. The tone of this paper has been directed towards

putting her in perspective, concordant with her achievements.

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Mr. Scott Blum, ISU student, conducted the manuscript through several editions.

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