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## Reflections on Women Scientists and the Iowa Academy of Science

LOIS HATTERY TIFFANY<sup>1</sup>

In this centennial year of the Iowa Academy of Science, various facets of scientific activity and development in the state of Iowa and the impact of the Iowa Academy are being examined. With our current awareness of equality, the contribution of women scientists to the Academy is a logical topic for comment. Perhaps in another hundred years it will not seem a necessary separate item to consider.

Women have been active contributors to the Iowa Academy from its earliest days. The first membership list in Volume 1 of the *Proceedings* for the reorganized Academy includes two female members, Nellie Ankeny and Minnie Howe, both of Des Moines. A later membership list for 1892 in the same volume also includes Alice Beach of Ames as a fellow. Included in that volume are four papers by women on diverse topics: "Some experiments for determining the active principle of bread making" by Minnie Howe, "Observations on the pollination of some Compositae" by Mary Alice Nichols, "Notes on the pollination of some Liliaceae and a few other plants" by Mary C. Rolfs and "Additions to the known species of Iowa Ichneumonidae" by Alice Beach.

As the Academy developed, the number of women involved in membership increased, always remaining a small minority. Also, only a limited group of the female members was active in presenting papers at the annual meetings, publishing these in the annual *Proceedings*, and serving on committees involved in the business and expanding interests of the Academy. In the first 80 volumes of the *Proceedings*, including volume 80 in 1973, 275 papers were authored or co-authored by women. Women have frequently served as section chairmen at the annual meetings, less commonly as appointed members of standing committees of the Academy. Smaller still is the group represented in the offices of the Academy. Miss Allison E. Aitchison served as second vice-president in 1916-1917. Dr. Dorothy Miller Matala served as a board member from 1958 until 1962, achieving this position because she was chairman of one of the standing committees, chairmen of which constituted the board at that time. In 1973, Dr. Ruth Siemer and Dr. Lois Tiffany were elected to three-year terms as board members.

The woman with perhaps the greatest impact on the Iowa Academy to date has been Dr. Jessie A. Parish. She presented a paper "The Pyrenomycetes or black fungi of Iowa" at the annual meeting reported in volume 30 of the *Proceedings*. This study was published as "Pyrenomycetes or black fungi of Iowa" in volume 35 of the *Proceedings*. This seems to have been the extent of her active participation in the Academy. She maintained membership in the Academy, however, and was sufficiently concerned to will a 240-acre farm near Reinbeck to the Academy. The history and development of the Parish Farm in relation to the Academy has been dis-

cussed by Horner in a paper in number 1, part 1, of this centennial series.

As I have viewed the Iowa Academy of Science history through the mirror of the annual *Proceedings*, reading the accounts of meetings and activities, scanning committee reports, noting the diversity of interests of the women in various scientific disciplines as reflected by the topics discussed in their papers, I have felt a new respect for those women who pioneered as active contributors to Iowa science and to the Academy. Many of the women members were active in the Academy for only a few years, often during a graduate school experience. For example, one of the young women listed in the 1895 membership list was Emma Pammel, Dr. L. H. Pammel's daughter. She had graduated from Iowa State in 1894, and in 1895 was co-author with Emma Serrine of a paper, "Anatomical studies in leaves of *Sporobolus* and *Panicum*," published in volume 3 of the *Proceedings*. She completed her Master of Science degree requirements in 1896 and that year presented a paper, "Comparative study of the leaves of *Lolium*, *Festuca* and *Bromus*," published in volume 4 of the *Proceedings*. By 1896 she had married N. E. Hanson, moved to Brookings, South Dakota, and no longer actively pursued her scientific interests. Such a sequence of events is certainly not unusual, then or now.

The women who were long-term regular contributors to the Academy or active in its programs are few. These women were typically single; no doubt each would have had her own reasons if one had been so bold as to question her about this situation. A reasonable mix of professional development and a home and family was a rare achievement; it was not a situation that was probable for the early professional women scientists. I would like to introduce very briefly three of these individuals who were involved in the Academy and contributed to it in different ways. As all three of these women were botanists or biologists, I should comment that I have tried to look at women and Academy history in general, not with regard to a particular scientific discipline. However, botany traditionally has been one of the sciences where women have had an opportunity to work and to contribute.

Charlotte M. King was associated with the Botany and Plant Pathology Department at Iowa State from 1894 until her death in 1937. She was the experiment station artist, working particularly in entomology and botany, for 25 years. From 1906 to 1930, Miss King was the seed analyst for the seed testing laboratory associated with the Botany and Plant Pathology Department. After joining the Iowa Academy in 1899, she contributed regularly to the papers presented at the annual meetings. A paper, "Weed survey of Story County, Iowa," in volume 21 of the *Proceedings* marks the beginning of her cooperative work in this area with Dr. L. H. Pammel. A long-time interest in the germination patterns of the seeds of various trees and shrubs is documented by a series of papers by Dr. Pammel and Miss King, beginning with "The germination and juvenile forms of some oaks" in volume 24 of the *Proceedings* in 1917. She was also co-editor with Dr. Pammel of two volumes published by the Iowa

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Geological Survey, one on the weed flora of Iowa and the other on the honey plants of Iowa.

The second woman scientist that I found to be extremely interesting was Dr. Ada Hayden. Dr. Hayden's career and professional achievements suggest some of the problems encountered by a woman scientist of her era. Beginning with her undergraduate work in botany at Iowa State in 1904, Dr. Hayden was greatly influenced by Dr. L. H. Pammel, an old family friend. After graduation with an M.S. from Washington University at St. Louis in 1910, she was appointed an instructor in botany at Iowa State. In 1918 she earned the first Doctor of Philosophy degree awarded to a woman at Iowa State, and was appointed an assistant professor. She was still an assistant professor at Iowa State at the time of her death in 1950.

Dr. Hayden worked in close cooperation with Dr. Pammel in the Iowa State Herbarium and in the preparation of illustrations, both drawings and photographs, for Dr. Pammel's various publications on the Iowa flora. After Dr. Hayden was appointed a research assistant professor of the Iowa Agricultural Experiment Station in 1934, she spent long hours studying the vegetation of the lakes and marshes of Iowa. She was a physically strong person, handling with ease the transporting and launching of her boat, wading as required to make observations and to take photographs or specimens. She was an excellent photographer, and her reports and research papers on Iowa's wetlands are handsomely illustrated. She utilized her knowledge and talents as a member of the Conservation Committee of the Iowa Academy. Her papers, published in various volumes of the *Proceedings*, deal with aspects of flowering plants and their distributions in the state.

As a child, Dr. Hayden had lived on an Iowa farm which included several acres of virgin prairie. In later years she was instrumental in interesting the Iowa State Conservation Commission in the acquisition of prairie preserves. During her lifetime, the Commission purchased two prairie areas she

recommended for preservation. After her death, the Howard County preserve was named the Ada Hayden Prairie in commemoration of her efforts to save some portions of the native flora she knew so well.

The third woman scientist I have chosen for comment was involved with the Academy at a more recent time. Dr. Dorothy Miller Matala worked effectively in Iowa and in the Iowa Academy of Science as a science consultant concerned with science teaching in elementary and secondary schools. Dr. Matala joined the faculty of the State College of Iowa in 1946 after receiving her Doctor of Philosophy degree from Cornell University following teaching experience in high schools and junior colleges in Indiana. She was a staff member of the first Iowa Teachers Conservation Camp and was influential in its program and development. She was a member of the governing board of the American Institute of Biological Sciences and served on its Executive Committee in 1962, the year of her death. She was the first chairman of the Science Teaching Committee of the Iowa Academy, and as its chairman served on the Board of Directors of the Academy from 1957 until 1962.

A year has passed since I was asked the question: "Do you know anything about the contributions of women scientists to the Iowa Academy of Science?" At that time I could only say that I had never really thought about those women who had preceded me in involvement in the Academy. Considering and investigating this question has been a rich opportunity for me to become more aware of this heritage.

EDITOR'S NOTE: Dr. Tiffany has, understandably, been overly modest about her own accomplishments. She has possibly been the most active woman member of the Academy in its history, and many of her contributions still lie in the future. Some indications of her professional activity can be found in the article by George Knaphus in this issue.