

Ms. from Dr. Lois Hattery Tiffany,* handwritten at top:

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I would like to discuss with you today some of the general items that have been widely discussed as concerns of the working professional woman and the particular problems of a woman developing her career as a scientist. I propose to do this in the following format.

First, I would like to summarize briefly items which have been identified as general problems for the professional woman. These concerns have been discussed vigorously from diverse viewpoints for some time, long enough that we may now be in a position of questioning whether changes have indeed occurred. And if so, how can these changes be evaluated. Then, I would like to illustrate the changes by introducing you to three women scientists in the botanical science area and discussing them and their careers. I will leave to you the greater problem of evaluating the changes after you have heard this data. These women are in no way presented to you as characteristic of women scientists and their total range of problems. They are three people, with their very individual personalities, drives, ambitions, talents—and problems.

First, the background, the general concerns of professional women, and particularly professional women scientists.

Much information is available, and many views have been expressed about the problems in the first steps toward entering a profession, namely, the availability of the basic educational experiences on which to build. Discrimination within the educational system in regard to the availability of the basic educational background, harassment in subtle ways once a woman has indeed become involved in the educational experience, a lack of equal access to financial support for more advanced education, lack of the professional attention so important in developing the experiences, viewpoints, and expertise necessary to effectively compete, this lack often coupled with the feeling that women are not "serious" about developing a scientific career and that time and effort devoted to their professional development and growth would be wasted.

Another facet of getting an effective background in a science is the availability of advanced work, graduate training or postdoctoral experience, at a prestigious institution in a particular field so that one "plugs in" to the professional underground, the so-called "old boy" network. Having worked with particular people in specific laboratories may well carry a distinct advantage in the competitive job-market.

Assuming a talented young woman has survived these hurdles and become an experienced, competent, talented young scientist, what are the problems of getting employment so that a career can be developed. All too often, a woman will become a member of a research team, with the direction and planning of a research effort not a part of her challenge. The subtle situation of working "with" as a colleague with equal input into a research effort or working "for" as a very talented pair of hands is not an unusual problem.

Once employed, it is not unusual for one of two not particularly desirable situations to develop. A woman may become the token woman in a particular field or with a particular working unit and be highly visible with every achievement publicized, or she may be benignly neglected with minimum support. Science, like all other human activities, has a political facet. This cannot be ignored in the real world, and must be considered realistically, evaluated, and dealt with in some manner by every individual—male or female. So, political astuteness may well be a factor in a developing career.

Last, but by no means least, the situation of a professional woman as a sexual being is a factor. If a professional woman or woman scientist is married, there is the problem of challenging job opportunities for both people in a specific place. If single or divorced, some people will feel that she is looking for a partner and will be a disruptive presence in the work situation. It is difficult for some people, both men and women, to understand that a woman can successfully integrate her role as a professional scientist with what is commonly viewed as the traditional female role.

Now for some specifics. First, I would like to introduce you to Dr. Ada Hayden. Dr. Hayden was a member of the faculty of the Botany department at Iowa State University for forty years. She was an only child, born in 1884, and grew up on an Iowa farm which included several acres of native prairie where she played as a child and which she studied as a young adult. She majored in botany as an undergraduate student at Iowa State, coming under the supervision of Dr. L. H. Pammel, a dynamic botanist with a broad range of interests.

After completing a MS program in botany at Washington University at St. Louis and doing some graduate work at the University of Colorado and the University of Chicago, she received the Ph.D. degree from Iowa State College in 1918. She was the first woman to receive a Ph.D. degree from that institution. She had been an instructor at Iowa State previously but after completing her Ph.D. program, she joined the Botany Dept. staff in 1918 as an assistant professor. Dr. Hayden taught classes in systematic botany, ecology, algology, and other botanical courses. Following Dr. Pammel's death in 1930, she assumed responsibility for the herbarium and functioned as curator of that facility for the rest of her life. A word of explanation may be useful for non-botanists. A herbarium is a collection of pressed plant specimens, correctly identified and mounted on paper with accompanying detailed information about the collection site where the plant was growing. They are organized into groups, housed in special cabinets, thus require constant care for maintenance and for organization due to addition of new materials. These dried plants document studies and are references for students and persons who need to correctly identify plants.

In 1934, Dr. Hayden was also appointed a Research assistant professor with the Agricultural Experiment Station. Her summer work for the station involved study of the vegetation of the lakes, marshes, and border areas of the state in relation to the feeding and nesting of wild water fowl and shore birds. She managed alone such tasks as loading, transporting, and launching her boat, if wading or swimming was required to obtain specimens or to investigate the area, she

accomplished the task. She was an excellent photographer and an artist, illustrating her thoughtfully written, informative reports with exceptionally good visuals.

She had earlier contributed drawings and photographs, and some writing, to Dr. Pammel's volumes on "The Weed Flora of Iowa" and the "Honey Plants of Iowa." She retained an intense interest in native prairies, and over the years accumulated a large collection of colored lantern slides of prairie plants. These were made from her own photographs which she tinted herself. When asked how she achieved such correct and beautiful results, her reply usually was that it took 15 brushes, 12 colors, and 3 weeks of midnight oil.

Largely through her untiring efforts, prairie areas were purchased by the Iowa Conservation Commission and set aside as prairie preserves. After her death, the 200+ acre preserve in Howard County was designated as the Ada Hayden Prairie. I invite you to Visit it in the spring when the shooting stars are in bloom, or in the fall when the heads inflorescences of the grasses of the tall grass prairie become a rolling sea in the passing winds, and you will realize the precious heritage Dr. Hayden has given to us all.

Not only did Dr. Hayden make an impact on Iowa botanical history, she was an active supporter of national professional associations, particularly those concerned with conservation. She was active in the Iowa State Chapter of a Professional Women's group, and various church and civic groups. Dr. Hayden never married. And, when she died in 1950, she still held the academic rank of assistant professor at Iowa State University.

The second woman scientist I would like to introduce you to you have already met this afternoon—myself. I joined the staff of the Botany department at Iowa State in 1950, the year of Dr. Hayden's death. Like Dr. Hayden, I was born in Iowa and spent my childhood years on an Iowa farm. My parents moved to Arizona, so my Iowa farm connections did not persist, but I did receive my academic experience, and ultimately my Ph.D., from Iowa State. My special area of expertise in botany is mycology, the study of fungi. My graduate major professor, Dr. Joseph C. Gilman, was my academic advisor when I was an undergraduate and he introduced me to the intriguing world of fungi. I did not realize until much later how very fortunate I was to have the opportunity to learn and grow under the demanding guidance of Dr. Gilman. Although he was very much a gentleman of the old school, he considered a good mind to be a talent that should not be wasted. And wasting to him was not training, developing, and using mind and talents to the maximum. This was not a point for discussion, if one had abilities, one developed and used them.

I had financial support available throughout my graduate studies. I was on a teaching assistantship during the academic year, with research support from an experiment station project during the summers. My dissertation project involved some field work—my fellow graduate students helped me with that, and I in return helped them. Three of us took our oral preliminary examinations the same week, 2 male plant pathology graduate students and myself. We studied

and worried together when we were preparing for this event, sharing our information and questioning each other for long hours. We all did survive! Now we joke about our anxiety on the rare occasions when we see each other.

As I have said, I joined the staff of the Botany department at Iowa State in 1950, the year I completed my Ph.D. work, at the instructor rank. Comparisons are difficult, and I can ponder now whether my academic pathway was average or slow. At the time I was too busy teaching botany, plant pathology and eventually, when Dr. Gilman retired, mycology, as well as carrying on an active research program and raising a family.

I was married early in my graduate years, my husband completing his undergraduate work while I worked for my PhD. Thus I had the challenge of balancing teaching and research opportunities that were exciting, even fascinating, to me, and the joys and problems of a family. In 1965, I was appointed to the rank of full professor, a professional recognition that Dr. Hayden did not receive during an academic lifetime of work and accomplishment.

I attempt to provide for my graduate students the kind of stimulating environment for study and research that I had the opportunity to develop in. I myself continue to learn and grow through my involvements with both graduate students and undergraduates, and by working with people interested in diverse aspects of the activities of plants and fungi, ranging from and consulting with plant pathologists to field trips with mushroom enthusiasts.

Yes, there have been problems. Yes, there are times when I know that opportunities have not developed that potentially could have—and I ponder why. At such times I think of Dr. Hayden and consider how much more diverse and potentially richer my life has been. I have had the experience with the good times and the bad, of having my own family. Dr. Hayden, and most other professional women of her era, did not have such an opportunity. I have had the friendship and challenging working relationships as equal contributors with a number of fine scientists, almost all of them men. I listened carefully to the comments I heard Dr. Hayden's fellow staff members make when I joined the staff at Iowa State—they respected her as a scientist; they thought her to be a bit peculiar as a person. By that time, near the end of her career, I suspect she indeed was.

The third person I would like you to meet is still a youngster, professionally. Maren Klick became a member of my graduate student group in the fall of 1975, with an interest in aquatic systems and the fungi that live in them. Maren grew up in the Chicago area spending summers in northern Wisconsin. She met her husband during their undergraduate years at St. Olaf's, they were married after graduation, and came to Iowa State for graduate school, Maren in aquatic mycology and Chris in psychology.

Maren was one of those graduate students a major professor treasures. She has a keen mind, curiosity, enthusiasm, and ability. Incidentally, she was my second female Ph.D. student; most of

my graduate students had been males. During Maren's graduate years and since, several other equally talented women have been graduate students in mycology in my laboratory.

Maren had no problems with financial support during her graduate years. She was usually on a teaching appointment during the regular academic year. During the summers she was supported on research assistantships at Iowa Lakeside Lab at Lake Okoboji, where she did her aquatic research.

In one sense, the "network" worked for Maren. One of my friends at a federal laboratory contacted me about a new mycology position that was being funded at another laboratory. He knew the kind of training my students were given, that it was exactly the expertise they were hoping to find, and asked if I would have anyone finishing a Ph.D. program within the next six months. I did, Maren was, and she was hired.

Both Maren and Chris completed their graduate work in 1980 and went to work in New Orleans. Maren is still there, as a research mycologist at the USDA southern regional research laboratory. She is a tireless worker, currently with laboratory experiments on mycotoxin producing fungi on cotton underway in the lab at New Orleans, and simultaneously, field studies which she is carrying out at the federal cotton breeding station just south of Phoenix, in Arizona. She is one of the "coming" young scientists in this area, and already has been an invited participant at international meetings dealing with aspects of this group of fungi. She is now single, having been divorced several years ago.

So here we are, in the third professional generation of this discussion. You will draw your own conclusions. I think that we have made progress. Even if situations are not "right," whatever that may mean, things are better. I encourage my female students to be responsible, reasonable and scholarly in their response and approach to problems. When I am discouraged and wonder if we really have made any impact, initiated any real changes, I recall the day a rather distinguished looking gentleman stopped at my open office door, after having walked past several times. I asked if I could help him, to which he rather slowly replied that he was looking for Dr. Tiffany and had been directed to this office. My reply—I'm Dr. Tiffany, what can I do to help you? With a look of surprise, he quickly answered "Are you sure?"

No one has asked me that question recently.

Document found in Jean Langenheim's notebooks on women in ecology; SLW scanned/OCR and minimally corrected, March 2016. Publication cleared with Jean Tiffany Day (daughter of Dr. Tiffany), Dr. Maren Klich, and Iowa State University Special Collections, which holds the original (RS 13/5/20; Box 20, Folder 32).