

## CHAPTER 6

### WORKING FOR A WOMAN SCIENTIST IN THE LATE 1940s

Since Ruth Patrick has been my mentor from 1948 to the present, I had first-hand exposure to what women scientists endured during the late 1940s. When Ruth gave a series of seminars at Virginia Polytechnic Institute and State University in the early 1990s, I noticed that the graduate students were very interested in her contrasting the experiences in her career with events they were experiencing. Karen Holl, a graduate student at that time, described the interactions as one of the highlights of her time in graduate school and commented on how much she appreciated Ruth's candid discussion of experiences she had as a female scientist in the middle of the 20<sup>th</sup> century.

The undergraduate students in American colleges and universities are approximately 60% women at present. This figure does not astonish the media, legislators, and young faculty members because they have forgotten or are unaware of the miniscule number of women in science after World War II. I am not surprised, but then I had the advantage of working for a woman scientist, which convinced me that the stereotypes of the mid-century were wrong. I was extremely proud that, when the Association for Women in Science celebrated its 25<sup>th</sup> anniversary in 1996, I was selected to be one of the 25 fellows of that organization. How gratifying to have recognition from a group that provided evidence that scientific ability is not gender related. Working for and with Ruth had a profound effect upon both my career and attitude.

Working for a woman scientist in an era when women scientists were, regrettably, a rarity was an interesting experience. On the plus side, I learned not to be concerned if I had a minority opinion or because my research was different from that of my colleagues, because a woman working on pollution was then definitely in a minority. When I accompanied Ruth to industrial meetings, we often met with chief executive officers. These industry heads were always male and were very interested in seeing and talking with a woman who worked near sewage and industrial waste discharge pipes. During these occasions, I saw their curiosity change to respect and then admiration when these men realized that Ruth was a first-rate scientist with all the necessary management skills to supervise a team of scientists and to analyze a series of complex issues. I also learned that one could overcome formidable obstacles if one had enough energy, commitment, and, above all, creativity.

An important skill I acquired while working with Ruth was how to obtain extramural funding, because science without money is extremely difficult (arguably impossible). In the Limnology Department at the Academy of Natural Sciences (ANSP), salaries were then entirely dependent on grants and contracts. If the cash flow stopped, so did salaries. It is a tribute to Ruth's fundraising abilities that salaries were only reduced once (from \$3,600 to \$3,000 per year), and they never were reduced again while I was there.

Had it not been for comments I heard outside the survey team, I would never have thought anything was unusual about working for a woman scientist. I once worked briefly as a sub-professional for the US Department of Agriculture research laboratory, and my immediate supervisor (Dr. Willits was the senior supervisor) there was a woman. I worked the midnight to 8:00 a.m. shift on extractions that had to be done around the clock. This position was my first and only semi-professional employment, and I felt honored to be trusted to work alone for eight hours each day without supervision. Since I was a sub-professional 6 (the lowest category in existence in those days), no one questioned me much about my position, so my reporting there to a woman scientist caused no comment.

I viewed Ruth as a scientist from whom I could learn much and who was launching a very exciting research project. She never asked anyone to work longer hours than she did herself. In addition to supervising two field teams during summer 1948, she also collected and identified diatoms. She worked long hours at what could be very tiring activities—this type of research involved rather arduous field work on occasions and was combined with attention to minute detail once one returned to the laboratory.

No one on either team, to my knowledge, thought about gender differences affecting professional activities. Some situations did develop for which no prior experience had prepared me. For example, when the team was using boats, Ruth did the same work as the other crew members and carried moderately heavy objects from the station wagon, van, or truck to the boats. However, in the evening when we were going to dinner (especially in the South in the late 1940s and early 1950s), one would be considered as lacking manners for not opening doors for a woman. Should I also show such cultural courtesies when we were colleagues in the field and sharing work equally? By trial and error, I finally decided that, when we were doing professional work, we were colleagues; but, on social and semi-social occasions, the civility thought appropriate in the culture of that time was mandatory. For those who view this as an example of latent male chauvinism, I should note that, while Mary Gojdics and I were each a protozoologist for one of the two field teams, she was so far senior to me academically that I would have opened doors and carried materials for her even if she were a man, because these courtesies would be my way of showing respect for a senior scientist. Why not do so as well for a woman who was both professionally and administratively senior? Gender had nothing to do with the allocation of respect! Showing respect and civility are not signs of servility! Respect is an acknowledgment of accomplishments one admires. Civility is merely an acknowledgment of the worth and dignity of another individual. The decline of both respect and civility in modern society is saddening to me and a cause for concern.

Ruth rarely talked about her childhood—she was too busy living in the present. Several times she told me that her father, an attorney in Topeka, Kansas, held her on his knee so she could use his microscope. This activity was probably the origin of her life-long passion for diatoms. Clearly, her father believed that females, even as little girls, could take an interest in science.

After many years of a working relationship, I was able to call Ruth by her first name. However, I never did so for my major professor David Wenrich because we were not colleagues after I obtained my PhD as I was with Ruth. In those days, respect for senior scientists was always demonstrated by using a professional title. This regime did not diminish either affection or cordiality, since respect is in another category.

Compensation (especially fringe benefits) was much less at ANSP than obtainable elsewhere in academe at that time, but I do not regret for a moment the years I spent there. We thought nothing of unpaid overtime work, although Ruth tells me that overtime is now paid in the department. Since I worked for a brief time when I was younger as an oiler in a paper mill and was paid not only overtime but also time and a half and sometimes double time, I learned the major lesson that professionals worked well beyond normal limits, sometimes double the expected work hours, without additional compensation. The crucial focus was obtaining adequate scientific evidence, not time spent. Perhaps this mind-set is the best description of the atmosphere at the time that Ruth first employed me and for which she was the role model. We considered ourselves privileged to be working on exciting research projects, and putting compensation before quality would have diminished the experience. Of course, one must care for family and personal needs of food and shelter. If one's occupation provides satisfaction and enjoyment, why spend time fighting for more money? I hasten to add that my job at the paper mill was not in this category, but many other activities (many not in science or research) I think would be equally rewarding for me. My first professional position gave me the opportunity to develop a set of guiding beliefs that has been modified, but not dramatically changed, during my entire career.

My recollection of field work with Ruth is still vivid. When she and others on the team were tired, the coffee was cold, and some of the sandwiches were in water in the bottom of the boat, she still wanted to collect "just one more sample." That night, everyone worked on samples. This attention to detail, to me, is the essence of scientific investigation—have confidence that the data base is adequate and relevant.

In a period when women were not regarded as the primary role models in science, my primary role model was a woman. Years later, when Ruth has been deluged with honors and awards, the choice of her for all these honors seemed obvious. I am grateful that I had a great opportunity to observe the process by which she earned such honors for over half a century.