

A Chemist Turns Historian

Guest Essay

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I became interested in chemistry very early, probably around the 5th grade. I would like to claim that I was attracted by the theories and ideas of chemistry or that I had some burning desire to understand nature, but in fact it was the laboratory equipment that fascinated me the most. Those wonderful arrays of glass tubes and flasks filled with mysterious boiling liquids that populated the laboratories of mad scientists on the Friday night reruns of old Frankenstein movies seemed infinitely more exciting to me than the coils of wire and falling weights of the physicist or the plants and animals of the biologist. Chemical reactions - those complete transformations of materials into something entirely different, with new and unexpected properties - somehow seemed more basic, more wondrous, and more irreversible than the subjects studied by other branches of science and being able to understand and manipulate them at will seemed like a sort of magical power to my 11-year old mind.

Needless to say, I soon acquired a Chemcraft chemistry set. However, I quickly abandoned its toy test tubes and plastic, undersized equipment in favor of the real laboratory apparatus one could buy from a catalog received from the company after sending in a dollar to become an official "Chemcraft Chemist." This, I suppose, was really my first chemical "degree." I was an avid home chemist throughout junior and senior high school and, by the time my basement laboratory was taken down, during my second year of college (much to my mother's relief), it had attained the status of a respectable private chemical laboratory.

In junior high school, an interested teacher allowed me to set up a second laboratory in one of the unused store-rooms off the class room where the science courses were taught. Here I worked my way through two college-level textbooks on chemical analysis and, on the basis of this work, won two local science fairs. I also went to work for a local drugstore under the mistaken impression that this occupation had something to do with chemistry. Though I soon discovered otherwise, the job did prove a useful source of chemicals for my ever-expanding home labora-



tory. In addition, the science coordinator for the local schools introduced me to the chemists at a local industrial laboratory and they also gave me chemicals and equipment when I needed them. This pattern continued through high school. At each step there were interested adults and teachers who were willing to go out of their way to encourage my fascination, or perhaps I should say, obsession, with chemistry.

My interest in the history of chemistry also developed quite early, largely as a result of reading, when I was 14, Mary Elvira Weeks' book, *Discovery of the Elements*, which was packed full of illustrations and photographs of old laboratories and famous chemists. As my understanding of chemical theory matured, my interest in knowing something about the origins of the ideas I was studying, and personalities of the chemists who had originally discovered them, also developed. Indeed, I have never understood how scientists can devote their lives to study-

ing certain theories and yet have no curiosity about the origins of those theories.

Throughout my undergraduate training I used every available free elective to take history of science courses. However, after finishing my B.S. in chemistry, I did not immediately continue on to the Ph.D. I felt that I needed a break and that I wanted to teach, so I went into a two-year Masters program in chemistry and education instead and became certified as a high school chemistry teacher. When I finally decided to return to graduate school, I was offered fellowships in both chemistry and history of science and had to decide whether I was a chemist interested in history or an historian interested in chemistry. It was very obvious that one had many more career options with a chemistry degree than with a history degree and I also realized that my interest in history was really an extension of my more fundamental interest in chemistry. I have never regretted the choice.

After finishing my Ph.D. in inorganic chemistry, I took a faculty position in chemistry at a college in New York. I continued to pursue history of chemistry as a hobby but assumed it would never be anything more. However, in 1986 a position in history of chemistry and chemical education became available at the University of Cincinnati. This position was unique in that it was located in the chemistry department and had been endowed by a former faculty member named Ralph Oesper. The position required someone qualified to teach both chemistry and history of chemistry. Since few professional historians of science have science degrees beyond the B.S level, most were not qualified and so, almost by default, I was given an opportunity to pursue my hobby professionally.

As an historian of chemistry, I not only read and study the older chemical literature in an attempt to trace the origins of our current knowledge of chemistry, I also edit a journal for the history of chemistry, and manage a collection of more than 4000 books relating to the history of chemistry (ranging in age from the 1600s to the 1920s), as well as a large collection of prints and portraits of old laboratories and famous chemists, and a museum of chemical apparatus. Though my training as a chemist is an obvious asset in reading and understanding the older chemical literature, the language skills I picked up as part of my chemical training have proved just as useful. The

extra courses in English composition required for the chemistry major have been helpful in editing the journal, and the courses in German and French I was also required to take have proved invaluable, since most important chemical literature of the 18th and 19th centuries was written in those languages.

Besides writing scholarly articles on the history of chemistry and teaching a course on the subject for our chemistry majors at Cincinnati, each year I travel to a large number of schools to give lectures on the history of chemistry. In the course of these visits I go through the storerooms and basements of the chemistry departments looking for old equipment to add to the apparatus museum and often visit the local used book stores to purchase additional volumes for the book collection. My hobby of woodworking has proven valuable in restoring some of the old equipment and in building reproductions of hard-to-find items. Likewise, my interest in caricature and art has proven of value in doing layout and design work for the journal and in constructing museum displays. The topics of these displays have ranged from the history of the chemistry set to the development of the modern spectrophotometer. More recently, some of these displays have been loaned to other schools and so I travel for that purpose as well.

As an historian, I also plan for the future by doing interviews with retiring members of the chemistry department and editing the departmental newsletter (which may be viewed as current history). I also see that important documents are saved as part of the historical archives for future historians. In short, my interests in history and art, combined with the excellent college education I received as a chemistry major, have all fused to produce an unusual and unique hybrid career which I would have never imagined on that fateful day 30 years ago when I found my first Chemcraft chemistry set under the Christmas tree.

Publication History

Written on request as a guest essay on alternative careers in chemistry for the textbook: J. B. Umland, *General Chemistry*, West Publishing: Minneapolis, MN, 1993, pp 620-621; *ibid.*, 2nd ed., 1996, pp 335-336.