



General Chemistry

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A Chemist Turns Historian



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I became interested in chemistry very early, probably around the fifth 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, I was attracted by the laboratory equipment. Those wonderful arrays of tubes and flasks filled with mysterious liquids that populated the laboratories of mad scientists on the Friday night reruns of old Frankenstein movies were 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—where materials were completely transformed into something entirely different—seemed more basic and more wondrous than the subjects studied by other branches of science. To my 11-year-old mind, a person who could understand and manipulate reactions at will possessed a magical power. Needless to say, I soon acquired a Chemcraft chemistry set. I quickly abandoned its toy test tubes and plastic, undersized equipment in favor of the real laboratory apparatus I ordered from a catalog supplied by the company after I sent in a dollar to become an official “Chemcraft Chemist.” This, I suppose, was my first chemical “degree.” I was an avid home chemist throughout junior and senior high school, and by the time my basement laboratory was dismantled during my second year of college (much to my mother’s relief), it had become a respectable private chemical laboratory.

In junior high school, an interested teacher allowed me to set up a second laboratory in an unused storeroom. 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 laboratory. In addition, the science coordinator for the local schools introduced me to the chemists at a local industrial laboratory, and they gave me chemicals and equipment when I needed them. This pattern continued through high school. At each step, interested adults and teachers 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 Mary

Elvira Week's *Discovery of the Elements* when I was 14. This book was packed full of pictures of old laboratories and famous chemists. As my understanding of chemical theory matured, I became more interested in learning about the origins of the ideas I was studying and the personalities of the chemists who had discovered them. Throughout my undergraduate training, I used every available free elective to take history of science courses.

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 wanted to teach, so I entered a two-year masters program in chemistry and education 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 a historian interested in chemistry. It was obvious that I would have 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. In 1986, however, 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 a historian of chemistry, I study the older chemical literature in an attempt to trace the origins of our current knowledge. I also edit a journal for the history of chemistry and manage a library 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 illustrations of old laboratories and famous chemists, and a museum of chemical apparatus. Though my training as a chemist is an obvious asset in understanding the older chemical literature, the language skills I picked up as part of my chemical training have proved just as useful. The courses in English composition required for the chemistry major have been helpful in editing the journal, and the German and French courses I was required to take have proved invaluable, since most important chemical literature in the eighteenth and nineteenth 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, I travel to a number of schools to lecture 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. I also often visit the local used bookstores

to purchase volumes for the book collection. My woodworking hobby has enabled me to restore some of the old equipment and build reproductions of hard-to-find items. Likewise, my interest in caricature and art has proven valuable in doing layouts 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. Recently, some of these displays have been loaned to other schools, so I travel for that purpose as well.

As a historian, I also plan for the future by interviewing retiring members of the chemistry department and editing the departmental newsletter (a form of current history). I also see that important documents are saved to become part of the 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 hybrid career that I never imagined on that fateful day 30 years ago when I found my first Chemcraft chemistry set under the Christmas tree.