

## Reminiscence: Horace Hood

B.S. 1944

### Early Warning

In 1941, freshmen registered in the chemistry curriculum were likely to hear stories about some of the courses that lay ahead of them, especially the courses that were particularly difficult or were intimidating in some other way. The stories I heard were about Chem 38, Identification of Organic Compounds, and Chem 50, Biochemistry. The Identification course was said to be both difficult and time-consuming beyond all others. Biochemistry was threatening for a different reason, perhaps for being invasive, an intrusion into your personal space. I found out later that both course descriptions were accurate to an astonishing degree.

In Chem 38 we had to identify 6 separate compounds and all the compounds (up to 5) in each of two mixtures. I must have gone through the 6 simples too fast. The friendly graduate instructor, Ben Aycock, gave me two mixtures that cut seriously into the time I normally would spend eating, sleeping, and studying for other things. I had not even realized they would let you work alone in a deserted lab at night. The final blow was that I missed one of the compounds in a mixture. Ben had managed to add to one mixture a compound, not listed in our textbook, with derivatives mentioned only in Beilstein, and with properties that were unusual  $\delta^2$ -amino-pyridine. Try testing that for primary, secondary or tertiary amine.

The first thing to say about Biochemistry is that I took the course in the summer in a fourth-floor lab with sunny skylights above lab benches that were coated with a black substance that reminded one of the perfect black-body radiator. In those days I sometimes used a bit of solvent to help in cleaning my glassware. One bright day when I removed the cork from the bottle of ether, the contents began to boil!

The unusual part of biochem lab work is that you are often analyzing your own bodily fluids, like blood, urine and gastric juice. The blood experiment was easy once you got used to cutting your own finger to get the samples. For urine, the main problem was the large glass bottle you had to carry around the campus for your 24-hour sample. The main problem with gastric juice was getting the sample: you had to swallow a stomach tube. We were advised by the teacher, Carl Vestling, that nobody would be excused from this procedure. With the stomach tube in place, we had to eat a itest meal (piece of toast), and then take several samples over a period of time. This meant that after aspirating each sample from your stomach, you had to have the tube still hanging out of one side of your mouth while you fitted a pipette into the other side of your mouth to draw a measured sample for analysis. Our class all performed well on this experiment and when we left the lab that day, I think we each felt a new sense of maturity.

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### Dr. G. Frederick Smith

Dr. G. Frederick Smith taught the course in instrumental analysis back in the days when analysis usually meant precipitation and weighing. I remember the course with favor, but most of my memories are of Dr. Smith and some of his unusual characteristics.

Dr. Smith evidently had one bad eye which caused him not to face you directly in conversation but to look away at about 30 degrees. This caused me some trouble one day when he called on me during a lecture and addressed me as Mr. Hode while looking, apparently, at somebody else.

Many professors had friendly connections with chemical companies for whom they consulted on industrial problems, but Dr. Smith is the only prof I knew who actually owned a company that made chemicals. Some of the analyses required in our course specified the use of perchloric acid or ceric sulfate, both products of the G. Frederick Smith Chemical Co. Both of these reagents were very useful indeed and had evidently not been readily available before Dr. Smith started his company. At the end of one lecture on the use of ceric sulfate in oxidimetry, Dr. Smith called the class to come forward and get a free copies of his cloth-bound monograph on the subject.

The lecture from Dr. Smith I remember most is the one in which he talked about nitrous oxide, one of his products, that he was promoting for use as a propellant for food products. The big market at that time was for propellant in the whipped cream dispensers used by soda fountains. At the end of the lecture one day, Dr. Smith brought out a huge tray of cookies and a large dispenser of whipped cream. With a great flourish he started spraying the cream on the cookies and called the class to come forward and get their cookies.

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#### **Dr. Frank B. Schirmer, 1941**

After graduating from a southern Illinois high school in 1941, I came to the University and managed to get into Chem 8 (after passing the placement test). My buddy, Bill (William R.) Schmitz from the same high school got in too. We compared notes and found that for my quiz class, I had the lecturer, Dr. Schirmer, while Bill had some graduate student. I felt sorry for Bill, but later thought he made out pretty well. His graduate student instructor was Fred Basolo.

In his quiz class, Dr. Schirmer told us that it was a requirement that we all have slide rules. At a given date, about two weeks ahead, he said he required that everybody would have a slide rule. At the appointed day, Dr. Schirmer asked for those having slide rules to hold them up so he could see them. Those who had none were dismissed from that session of the class and told to bring them next time to get back into the class.

In one of his lectures, Dr. Schirmer talked about the properties of hydrogen and its combination with oxygen to form water. He had at the lecture table a toy cannon that he managed to fill with hydrogen and oxygen and to explode the mixture. The cannon had been fitted with a cork at the end of the barrel. At the explosion, the cork went like a bullet and hit the glass transom above the doors in the back of the lecture hall. It cause several cracks in the glass but no fallen pieces. Dr. Schirmer went on with the lecture, explaining, I suppose, about exothermic reactions, and seemed to accept the event without further commentary. I wondered afterward what the planned trajectory had been, if any, and whether all this had happened in previous demonstrations.

And, later, I remember Dr. Schirmer in the lab helping a student to check out of the lab, and do all the required things to drop the course. Dr. Schirmer was very upbeat, telling the student how

lucky he was to find out early that chemistry was not for him. He could take his money and do something else; he could go into business, etc. Of course, we never saw that student again.

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### **Poisons, 1941-1943**

As a freshman in Chem 8, I was astonished to see a big bottle on the side shelf labeled, "KCN." It was a dilute aqueous solution of KCN that was required for some of the analytical tests. I was amazed that there were not even any warning signs. It was implied that chem students should know what is poisonous and what is not, and, in any case, should not be ingesting any of the reagents anyway. I felt I had been elevated into a higher society where there were not going to be a lot of warnings.

Later (1943), as a senior doing a thesis on a derivative of nicotine, I worked with Dr. Robert L. Frank. The first step in the lab was to prepare nicotyrine by dehydrogenating the pyrrolidine ring of nicotine. I got my starting material from a 1-L bottle of nicotine that Dr. Frank had in his lab. There was some discussion of the poisonous aspects of the reagent and I remember the requirement that after liquid was poured from the bottle, the outside of the bottle had to be wiped with paper or cloth towels, and the towels had to be discarded (in the general trash) immediately. Again, the careful handling of very toxic materials was simply something to be expected from youthful chemists. (Maybe the ones that flunked this test are no longer with us.)

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### **Dr. Fuson, Happy New Year, 1943-1944**

As an undergrad in Alpha Chi Sigma, I learned a lot just listening to the grad students. I know they all spent long hours in the lab with the normal day ending at 9 or 10 p.m. I am not sure why I was around on the week after Christmas in 1943, but I remember the discussion about whether they would be required to work on New Year's Day. The answer was given by a Fuson student who had asked the boss if they were expected to come in on New Year's. He said, Dr. Fuson smiled and said, "Well, I'll be here."

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### **Dr. Reedy on the Stairs**

My recollection of Dr. Reedy is seeing him come down the old wooden stairs in Noyes Lab while glaring very unpleasantly at my friend, Calvin Stevens. I had no reason to know Dr. Reedy and Steve was explaining to me who he was and why he was glaring. The glare was because Steve was whistling to annoy Dr. Reedy who evidently hated public whistling, especially where he could hear it.

Dr. Reedy was known to us undergraduates as the author of trim little text on qualitative analysis of inorganic compounds, and as the founder of a table of oxidation potentials. In one of my chemistry courses, I was told that there were two main tables of oxidation potentials that differed

simply in their use of plus and minus signs. I think that meant you could change one table into the other by multiplying everything by minus one. But, then I was also told that there was a third table authored by Dr. Reedy. It is hard now to think how a third table could exist, with the other two pretty well covering the field. The implication was that, except for the students in Dr. Reedy's classes, it was probably safe to ignore his table.

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### **Chemistry Personnel Department**

The Chemistry Department had no personnel department for students, but they had something much better: they had some faculty members dedicated to students and their welfare.

My first purely personnel encounter was a meeting with Dr. John C. Bailar, Jr. I was told by one of my instructors that, as a student in the chemistry curriculum, I should make an appointment with Dr. Bailar and just tell him how I was doing and what program I intended to follow. My plan, unchanged from high school, was to take chemistry, and if all went well, to go ahead and get a Ph. D.

The second faculty member to take care of me was Dr. Robert L. Frank, my senior thesis advisor. I do not remember any personnel type discussions, but Dr. Frank did a lot of work that I did not know about at the time.

The third faculty member that advised me was Dr. R. C. Fuson. When I was about to graduate in the spring of 1944, I was advised to pick a graduate school. I picked the U of MN with Dr. Fuson's approval. He said something like, "It is a little different up there. Some days you will think that they regard the Ph.D. as something like the Nobel Prize. Also, I know you liked Illinois, but try not to wave the Orange and Blue too much up there."

Three weeks after graduation I was inducted into the Navy where I studied electronics for two years. A week after I got out of the Navy, I discovered that Dr. Frank had found an NRC fellowship for me to cover my stay in Minnesota.