15/5/25
Liberal Arts and Sciences
Chemistry
John C. Bailar Papers, 1852-65, 1900-97

Oral History Tapes, Interview by Wyndham D. Miles, Oct. 9, 1964

Reel 1

Dr. Bailar was born in Golden, Colorado, May 27, 1904. His father was a member of the chemistry staff of the Colorado School of Nines and they lived across the street from the campus. He went to his father's office frequently, even as a small boy, and began entering school. His father taught analytical, industrial, and general chemistry, a service course for students in mining and metallurgy. Both mother and father were graduates of University of Colorado. Bailar's father was the first graduate of Leadville High School in 1883 - 3 people in the class but his name was the first in the alphabet so he was the first graduate. He worked on the farm and as a stone mason and did various things; was 32 years old when he married Bailar's mother who was 25. She had been to a normal school but neither had been to a college. They were living in Glenwood Springs at the time and his father was still working on the farm. His mother thought if they saved their money for 4 or 5 years they could both go to college, but Bailar's father was not convinced until one day he overheard someone say that the second semester was about to start. So he announced to his wife that they were going to college now; they started in January 1898 and 3 1/2 years later both graduated. Bailar's father taught science in the Cripple Creek High School for 2 years and then went to the School of Mines as Assistant Professor of Chemistry; stayed there until 1918 when he left to become research chemist for the Great Western Sugar company in Denver, but they continued to live in Golden.....000-039

Recollections of "growing-up years" and time spent with his father - who really was Bailar's first teacher - talking about chemistry and chemical formulas. His introduction to the Journal of Chemical Abstracts...039-093

Bailar took chemistry in Golden High School but didn't enjoy his teacher - had biology with him the year before - although the course probably systematized Bailar's thinking about chemistry. He graduated from high school in the spring of 1920 along with his sister who was 2 years older, and they both got scholarships ($10.00 a quarter) to the University of Colorado at Boulder where they enrolled that fall.....093-145

Bailar's courses in college; majored in chemistry. Professor John B, Eckley (Ph.D. in Holland, Swedish), head of the department, gave the lectures and professor Horace von Valkenburg taught qualitative analysis. Bailar later did his master's thesis with von Valkenburg and they published a paper together. Bailar had very good teachers throughout his college years at the University, where he stayed for another year and took his master's degree (History of Chemistry, 185-88).....145-191

207-227

The summer between his senior year and first year of graduate work Bailar attended the University of Michigan and had a course in X-ray, part of which was taught by the younger Bragg from England. Discussion of his assignment.....191-207
352-374

Laboratory and library facilities at the University were quite adequate at that time (changes in chemistry).....227-254

Bailar's high school days were very productive but he was not happy; he was younger than most of the students, his parents very strict, he studied very hard and didn't have much time to play.....254-280

Dr. Bailar had a wonderful time in college - took part in school activities, worked on the school annual and comic magazine, played tennis, took music lessons on the side. He earned most of his expenses - worked in the registrar's office in the telephone exchange in his freshman year, carried mail, did mimeographing, did tutoring in chemistry and "pharmaceutical arithmetic", etc. Was given a scholarship of $400 for his graduate year. His thesis for the master's degree (1925) was on "nitrogen tetrasulphide (explosive, pretty crystal & odor) and nitrogen tetraselenide (molecular weight)" and it was published in the Journal of The American Chemical Society.....280-331

Educational background of some of Dr. Bailar's teachers.....331-352

Dr. Bailar had been active in Alpha Chi Sigma, chemistry fraternity at Boulder, and he was chosen to go to the National Conclave in Pittsburgh the summer between his senior and graduate years (1924). He decided he might as well go to summer school in the east, since he had to make the trip anyway, and, after looking over a number of catalogs of eastern colleges, chose the University of Michigan. Dr. Bailar says he really enjoyed that summer (took 3 Physics courses: light, x-rays, & atomic structure).....352-274

A year later Dr. Bailar went to Michigan on a fellowship and worked with professor Moses Gomberg. He stayed 3 years and had a teaching fellowship for the other 2 years. Took his doctor's degree in 1928.....374-377

Impressions of Professor Moses Gomberg (Russian born), one of the world's great chemists (taught beginning organic) and from whom Bailar learned a great deal of technique.....377-455

Dr. Bailar discusses "free radicals" which was the subject of his Ph.D thesis (demonstrate that there was a free radical measure of absorbtion of light; used Gomberg's

apparatus).....455-535

While at Michigan, Dr. Bailar lived at the Alpha Chi Sigma house for the first 2 years and the third year lived with Dick Clarkson. They had a room in a private house but took their meals at the fraternity...535-565

From Michigan, Dr. Bailar went directly to the University of Illinois. Professor H. H. Willard had received a letter from Professor B. S. Hopkins at Illinois saying they needed an instructor in general chemistry. Willard recommended Bailar and suggested he apply for the job if he was interested. Bailar discussed it with Gomberg. Eastman Kodak had offered a position but wanted an immediate reply, so Bailar refused the offer at Eastman. He did get the job at Illinois, went there in September 1928 and has been there ever since.....565-597

Dr. Bailar's courses at Illinois: taught freshman chemistry with recitation and lab classes, gave lectures in Chem. 2, general chemistry, and later taught advanced inorganic chemistry and complex ions. He wrote a book with some of his former students on "Chemistry of Coordination Compounds".....597-644

<u>Reel 2</u>

Dr. Bailar's administrative duties at Illinois: a separate building was constructed for elementary and sophomore chemistry called the Chemistry Annex and under the guidance of Professor Hopkins, Bailar was administrative officer in all of the general chemistry. When Hopkins retired 10 years later, Bailar also took over Hopkins' work as head of the Inorganic Division which included the general chemistry.....7-25

In 1937, Dr. Bailar was asked to be secretary of the Chemistry Department. He was assistant to Professor Roger Adams who was Head, and Bailer had charge of the summer session, machine shop, placement work, etc. He did placement work for 15 years and in this capacity made lots of friends in the chemical industry (placed students - 200 a year).....26-49

As the department grew, Dr. Bailar realized he had to decide between being a placement officer or a chemist - he couldn't do both. He had become involved with ACS activities by then and so he asked to be relieved of duties other than teaching and committee assignments.....50-60

Dr. Bailar's ACS activities: secretary, vice-chairman, chairman, and councilor of the Local ACS Section; through councillorship he became a member of the committee on national meetings and divisional activities and was chairman of that committee when elected president of ACS. Bailar was very surprised when Byron Riegel came and said he was proposing Bailar's name (1951) for the presidency. He was nominated 2 or 3 times before he was elected in 1957, so he was president-elect in

1958 and president in 1959. The president of the ACS is, ex-officio, a member of the Board of Directors for three years - the year that he is president-elect, the year that he is president, and the year that he is immediate past president, and Dr, Bailar served as a member of the Board during those three years. The board actually runs the society. While president, Bailar went on 2 lecture tours and appeared before many of the larger sections and gave talks on a variety of subjects. The new ACS building was constructed while Bailar was president.....61-119

Discussion about publishing the Journal of Inorganic Chemistry...120-157

Dr. Bailar spent most of his time, while president, on policy decisions, attended meetings of councils and board of directors, the publications conference each summer, gave lectures at local sections, etc. professor Therald Moeller and Dr. Bailar were instrumental in starting the division of Inorganic chemistry, which numbered 440 members to start with..158-190

Dr. Bailar's family: the second year he was an instructor at Illinois, Dr. Bailar met Miss Florence Catherwood who was a graduate student and assistant in general chemistry. They were married August 8, 1931. They have 2 sons; the older, John Christian III, was born October 9, 1932 and Benjamin Franklin on April 21, 1934. Both boys went to the University High school in Urbana, Illinois and to the University of Colorado. John went on the medical school at Yale and took his M.D. degree in 1955, came to NIH and words in the National Cancer Institute (Demography Section). Ben majored in geology, for a science background, but was interested in commerce and business and went to Harvard, took a master of business administration and worked for Continental Oil but is now with American Can Company in New York City.....191-245

Dr. Bailar's philosophy of science.....246-284

Dr. Bailar is now treasurer of International Union of Pure and Applied Chemistry. He was appointed chairman of the finance committee of the Union in 1961 and then made treasurer in 1963; his term expires in 1967.....285-317

Videotaped Autobiography Interview, June 1988

John Bailar talks about his youth, academic work at Colorado and Michigan, isomer research coordination chemistry, research and teaching, three former students became ACS presidents.

Peoria Soybean laboratory wanted to remove bitter taste; platinum complexes for hydrogenation were investigated, 18 to 20 papers published in 3 to 4 years.

Cobalt and platinum

I request past doctoral students from former students in Japan.

I had to retire at 68. I love to teach.

Prof. B. Smith Hopkins retired and invited JB to help him on the 4th edition of a text.
I got 25% to 55% of the royalties. I started to write a general chemistry text, which eventually required four authors. The publisher then hired a style writer and a problems writer.
No you have to read reviewers comments, which is often a waste of time.

B. Smith Hopkins was professor of inorganic chemistry. Primarily a teacher, he did rare earths research. He taught classics and coached football in college. His degree was in physical chemistry at Johns Hopkins.

Illinois offered $2100 and I accepted. "I never regretted it" Michigan Professor Willard pushed JB for the job Hopkins offered. Willard was a friend and associate.

Moses Gomberg was a Russian immigrant. Modest and shy he only took three graduate students and saw us every two or three hours. My research was on free radicals. I left organic chemistry. He was a great laboratory technician. Three faculty supervised all doctoral students.

I arrived by train from Peoria. Called on Roger Adams and B. S. Hopkins, who explained how to succeed in the department. I supervised general freshman chemistry in the Chemistry Annex at age 25 - "a lucky break". I continued for thirty years. Handled placement work for 14 years. I worked from 8 to 5 and 7 to 11. Placement led to wonderful friendships.

John C. Bailar interview by student (tape cassette), April 18, 1980

1-150 16 years ago I gave my last course. 1972 - I retired and ceased teaching general chemistry. I was not involved with Plato. Our senior staff people gave the lectures. The lecturer's projected personality, interests, and enthusiasm is very important. I was not enthusiastic about television lectures. It's hard for students in a class of 300 to see the demonstrations. General chemistry used to concern the sources and uses of chemistry. Now freshmen study the theory of bonding. We discussed the cessation of importing sodium nitrate from Chile. Chemistry has an influence on our lives. General chemistry is not taught this way now. Texts do not cover the influence of chemistry. Applications can be discussed in sophomore organic chemistry.

151-196 Very great changes in the methods of teaching since 1960. Old lecture and discussion approach died out about 15-20 years ago.

197-249 Prof. Hopkins was in charge of general chemistry. We all felt that the Chemistry Annex has much more efficient use of space. In the Annex, about 80% of the space was used for instruction. Large rooms allowed more instructors and students to be in a room. I moved to the Annex and was there at 7:50 a.m. and 1 p.m. everyday. I enjoyed that.

250-282 From 1937 to 1953, I handled all the placement work for the Chemistry

Department. All levels of degrees and all areas. I tried to know their names, specialties, and interests. It's a wonderful way to make friends. You become the "father confessor". I don't know how I handled it all. I was a very busy and very happy person.

283-379 World War II caused enrollments to decline, especially graduate students. Great hordes came back after war. They knew what they wanted and they worked hard. We had a superior group for two or three years. A lot of war research on smoke screens and nerve gas went on here. Fortunately a gas that affected the eyes was not used. We made and shipped off great quantities of this gas. We developed a scattering phosphorous smoke screen. We developed a dense smoke based on ferrous oxide. When some went off by accident, we filled the whole Chemistry Annex with dense smoke and HCl fumes. We did not lose students to the draft. Things went along about the same in instruction. We have freshman students that now take subjects we used to teach to seniors.

380-402 Textbooks have changed to lessen descriptive chemistry. Students now do not get knowledge of applied chemistry.

403-455 Greek philosopher's statement about kindling a student's desire to learn. The desire must be aroused. Home economics and medical students sometimes do not understand the need for chemistry. Medical workers understand the importance of chemistry. Civil engineers don't understand the relevance of chemistry.

456-465 Teachers are moving back from physical chemistry to descriptive chemistry.

466-505 Freshman chemistry labs were not as effective as they should have been. With 2,000 students, you can't assign research problems. Everybody knows what is going on. I have never known just how to handle that problem. We used to assign extra work to those who got ahead. Some liked chemistry, others despised it. Small colleges have an advantage. 50 students in a class allows variety.

506-547 I retired in 1972 and have kept my office. I keep busy at research and publish papers. I have Army Research Office money to study platinum atomic exchange. I still give ACS lectures outside. Each spring, I teach a two week course in Guanajuarto, Mexico.

548-595 75th Birthday symposium was conceived by my former graduate students. Their talks were distributed in a book. Outdoor party in our yard. It was like a 4-day circus. Last year, they had a reception at the ACS meeting in Hawaii. Japanese gave a scroll. My graduate students have been very loyal friends. 90 of my students took doctoral degrees with me. This is a "life long arrangement". You are always available.