

DOCUMENTS OF THE GENERAL FACULTY

**REPORT OF THE MEMORIAL RESOLUTION COMMITTEE FOR
GILBERT H. (GIB) AYRES**

The special committee of the General Faculty to prepare a memorial resolution for Gilbert H. (Gib) Ayres, professor emeritus, chemistry and biochemistry, has filed with the Secretary of the General Faculty the following report.

John R. Durbin, Secretary
The General Faculty

**IN MEMORIAM
GILBERT H. (GIB) AYRES**

Gilbert (Gib) Ayres was born on August 29, 1904, in Upland, Indiana, and died in Bedford, Texas, on June 9, 1997. During a lifetime of more than 92 years, Gib left his mark on all those who were privileged to know this "gentleman of gentlemen."

Gib earned an AB degree from Taylor University (Upland), majoring in chemistry and mathematics, and continued his education at the University of Wisconsin at Madison, where he received a PhD in chemistry in 1930 under the tutelage of J. H. Walton. He later did postdoctoral research with H. H. Willard at the University of Michigan. Gib's first academic position was at Smith College, where he was appointed assistant professor in 1931, promoted to associate professor in 1937, and chaired the department in 1942. During this period he taught advanced general chemistry and both qualitative and quantitative analytical chemistry, and supervised six seniors for their honors reports and four graduate students for their MA degrees.

Gib, a lieutenant in the U.S. Naval Reserve, was called to active duty as an anti-submarine warfare officer in 1943 and promoted to lieutenant commander in 1946. He returned to Smith for one year, in 1946, before accepting an appointment as associate professor of chemistry at The University of Texas at Austin. He was promoted to professor in 1951 and remained with the department until his retirement in 1974. During his career at UT, Gib supervised the dissertation research of 29 PhD candidates and 12 MA candidates.

In the preface and first chapter of his textbook, *Quantitative Chemical Analysis* (Harper & Row, 2nd edition), Gib described his view of quantitative analysis:

"It is the author's belief that quantitative analysis is, foremost, a course in *chemistry*, including principles, reactions, calculations, applications, and techniques. . . . Furthermore, it is the author's opinion that a textbook for elementary quantitative analysis must give detailed treatment of fundamental principles and methods, with explanations and examples that can be assimilated by the student, without the need for supplementary study from reference books or journals.

". . . Analytical chemistry deals with the detection of the kinds (qualitative analysis) and the measurement of the amounts (quantitative analysis) of substances present in samples of material. Analytical chemistry includes not only the manipulative techniques, but also the theoretical considerations upon which separations, detections, and measurements are based. "In many respects, analytical chemistry is the foundation upon which other branches of chemistry build. Chemical reactions are studied on the basis of the qualitative and quantitative changes that occur: new compounds are identified by analysis; the law of definite proportions and the law of multiple proportions resulted from a study of the quantitative relations in the combination of elements between the amount of electricity and the chemical change associated with it; and so on for the other laws of chemistry.

“ . . . The analytical chemist must be well trained in the other branches of chemistry as well, and to an increasing extent also in mathematics and physics. Distinction should be made between a ‘chemical analyst’ and an ‘analytical chemist’. The former is a ‘determinator’ with little or no scientific knowledge, who follows prescribed directions in performing certain operations that will, if everything goes according to plan, produce a ‘result’. The analytical chemist interprets results, modifies existing methods as circumstances warrant, and develops new methods. He must be inquisitive, and sometimes skeptical. He must be scrupulously honest, for upon the results of his work may depend the success of an industrial venture, or even the lives of many individuals. He must have patience, ingenuity, and perseverance. Analytical chemistry is a challenging field of endeavor, calling for the best efforts of a well-trained individual”

Professor Allen Bard recalled vivid memories of Gib’s teaching abilities: “I met Gib when I joined the faculty at UT in 1958. It was clear from the first time we taught different sections of the same sophomore analytical chemistry class, Chemistry 412K, that Gib was a master teacher. He had just published his textbook, *Quantitative Chemical Analysis* (Harper and Row), which was an excellent and rigorous treatment of the field and formed the basis of the course. He was a conscientious and dedicated teacher, and he taught me a lot about the importance of teaching and how to organize a course. For example, we gave several exams to all of the sections during the semester. These were always three-hour exams and were given in the evening. Gib insisted that the exams be graded that same night and returned to the students at the next class. Thus, we and the teaching assistants who had been proctoring the exams would work to the wee hours to get the exams graded. He also started almost every lecture section with a ten-minute quiz on the material from the preceding lecture. Gib also taught at the graduate level. His research interest was in the spectrometric analysis of the noble metals, and he produced a number of graduate students in analytical chemistry who went on to distinguished careers in academia and industry.”

Charles M. Maddin, who received a PhD in chemistry in 1953 under Gib, recalls their association: “Gib Ayres was my teacher, mentor, and friend in that order, but the most important to us both was our friendship that lasted 48 years. In the fall of ’48, Gib had agreed to let Dr. S. H. Lee teach the primary analytical course for chemistry majors, Chemistry 812, while Gib would teach the first semester course for non-majors. Lee did not teach with the authority that Gib displayed, and that led many of the students to drop the course. Gib knew something had to be done, so he took over the reins of Chemistry 812 in the spring semester. That was my first contact with him and he was indeed a master teacher and a gentleman.

“Gib took on the first black student to obtain a PhD degree from UT, Ray Floyd Wilson, with whom I shared a research lab. When graduation day came in 1953, five of the twenty graduating in chemistry were Ayres’ students. Ray and I are the only two living now. The mentality of the administrators at that time was that having a black student march in the graduation exercises would be a problem in that nobody would want to walk down the aisle with him. Gib said, ‘Hell’s bells!’ (Gib’s only cuss words!) ‘I’ll walk with him.’ In the end, there was no problem, and there was nice applause when Ray was hooded. One of my aunts remarked that he must have been a popular student, but it was really just a congratulatory applause for being the first to achieve the extraordinary.

“Gib took his graduate students to LSU between semesters for their analytical symposia. There we heard Peter Debye, Frank Welcher, Fritz Feigl, Herb Walsh, A. J. P. Morgan, Charles Reilly, and many of the ‘who’s who’ in the world of chemistry. After Ray Wilson came on board as a graduate student, Gib was told that they could not house him in a dormitory with the rest of us at LSU. Gib just quietly canceled the symposium trip that year to avoid embarrassing Ray. A gentleman indeed!”

Gib assumed responsibility easily and had several roles in departmental administration, including terms as graduate advisor, assistant chairman, and secretary of the analytical division. In other words, he paid his dues in service while maintaining a full teaching load.

He was a Fellow of the American Association for the Advancement of Science, and a member of the American Chemical Society, Sigma Xi, Phi Lamda Upsilon, and Alpha Chi Sigma. In 1970, Gib’s scientific contributions were recognized when he was named “Analyst of the Year” by the Dallas Society of Analytical Chemists. He served as a consultant for several professional and government groups including TRACOR, Inc., in Austin, and Los Alamos Scientific Laboratory in New Mexico.

After his retirement from the University as professor emeritus, Gib established an endowment to provide a fellowship in chemistry.

Gib is survived by two daughters and sons-in-law, eight grandchildren, and 20 great-grandchildren.

This memorial resolution was prepared by a special committee consisting of Professors Emeritus L. O. (Tom) Morgan (chair) and Norman Hackerman, and Professor James A. Holcombe.

Distributed to the Dean of the College of Natural Sciences, the Executive Vice President and Provost, and the President on May 3, 2001. Copies are available on request from the Office of the General Faculty, FAC 22, F9500. This resolution is posted under "Memorials" at: <http://www.utexas.edu/faculty/council/>