

ERNESTO GIESBRECHT, GREAT CHEMICAL EDUCATOR AND FATHER OF BRAZILIAN INORGANIC CHEMISTRY

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ABSTRACT

Ernesto Giesbrecht, Brazil's foremost inorganic chemist and chemical educator was born in Ponta Grossa, Paraná, Brazil in 1921 and passed away in São Paulo in 1996. He obtained the Bachelor Degree in Chemistry from the University of São Paulo in 1943 and was awarded a Doctor of Science Degree by the same institution in 1947. He worked at the University of São Paulo most of his life and published over one hundred and fifty scientific papers dealing with alkaloids, compounds of sulfur, selenium and tellurium, chemical education and the chemistry of lanthanides and actinides. He trained approximately thirty research scientists in inorganic chemistry, that eventually spread chemical education and inorganic chemistry throughout Brazil. Prof. Ernesto Giesbrecht was a great chemical educator and may be considered the father of Brazilian Inorganic Chemistry.

RESUMO

Ernesto Giesbrecht, notável educador e fundador da escola de química inorgânica brasileira, nasceu em Ponta Grossa, Paraná, Brasil em 1921 e faleceu em São Paulo em 1996. Formou-se Bacharel em Química na Universidade de São Paulo em 1943 e obteve o grau de Doutor em Ciências da mesma instituição em 1947. Trabalhou na USP a maioria da sua vida e publicou mais de cento e cinquenta trabalhos científicos sobre alcalóides, compostos de enxofre, selênio e telúrio, educação química e a química dos actinídeos e lantanídeos. Formou aproximadamente trinta pesquisadores que eventualmente espalharam e consolidaram a química inorgânica e a educação química no Brasil. O Prof. Ernesto Giesbrecht foi um grande educador químico e pode ser considerado Pai e Fundador da Química Inorgânica Brasileira.

KEYWORDS: History of Chemistry, Actinides, Lanthanides, Compounds of S, Se, Te.

Ernesto Giesbrecht was born on March 27, 1921 in Ponta Grossa, Paraná, Brazil and died in São Paulo on July 20, 1996. His father Hugo was an employee of the railway company in the State of Paraná and his mother Rosina was originally from Joinville, Santa Catarina. He completed elementary school and began secondary school in his native town, Ponta Grossa.

When Ernesto was eleven years old, his family moved to

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São Paulo where he completed his secondary school studies at the Liceu Coração de Jesus and graduated in 1939. Subsequently, he entered the Faculty of Philosophy, Sciences and Letters of the University of São Paulo where he was awarded the Bachelor of Chemistry Degree in 1943. He received the Doctor of Science Degree from the same university in 1947. His doctoral dissertation dealing with organic compounds of sulfur, selenium and tellurium was done under the scientific supervision of Heinrich Rheinboldt.

In 1952 Ernesto Giesbrecht passed the public contest for Privatdocent (Livre Docência) at the University of São Paulo defending a research thesis dealing with reactions of hydrazine with selenious acid derivatives. In 1953, he went to Zürich, Switzerland where he worked with Paul Karrer (Nobel Prize in Chemistry of 1937) in the area of alkaloids. During 1956, he collaborated with Ludwig Audrieth at the University of Illinois, studying the chemistry of rare earth polyphosphates.

Ernesto Giesbrecht held faculty positions at the University of São Paulo from 1943, when he entered as Assistant Professor of General and Inorganic Chemistry, until his death in 1996. He became a full Professor of Chemistry in 1962 and retired formally in 1991, but continued his work at the Chemistry Institute as an Invited Professor up to the end of his life.

Prof. Ernesto Giesbrecht held many important administrative positions, among them those of Director of the Chemistry Institute of the University of São Paulo (1974-1978), Dean of the Faculty of Philosophy, Sciences and Letters of the University of São Paulo at Ribeirão Preto (1981-1984), Assistant Dean of the School of Cultural Communications and Vice-Director of the Institute of Biological Sciences of the University of São Paulo. He was a member of the Chemistry Advisory Committee of the Brazilian National Research Council (CNPq), Coordinator



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of the Multinational Chemistry Program of the Organization of American States (OAS) and together with Henry Taube acted as Coordinator of the U.S. National Academy of Sciences - Brazilian National Research Council (CNPq) Cooperation Program in Inorganic Chemistry.

Prof. Dr. Ernesto Giesbrecht was also a member of the Executive Committee of the Commission of Chemical Education of the International Union of Pure and Applied Chemistry (IUPAC) from 1980 to 1985, participated at many international symposia and conferences patronized by IUPAC and UNESCO (United Nations Scientific and Cultural Organization) and presided and organized, among others, the 1st and 5th Latin American Seminars sponsored by the Organization of American States and was Co-President of the Ninth International Conference on Chemical Education held in São Paulo in 1987 and sponsored by IUPAC.

Prof. Ernesto was a member of the Brazilian Academy of Sciences, founding member of the Academy of Sciences of the State of São Paulo and recipient of many prizes, awards and distinctions. Among them we cite the Fritz Feigl Prize in 1969, the Heinrich Rheinboldt Prize in 1971, the Special Recognition of the Brazilian Chemical Society in 1991, the Brasted Award of the American Chemical Society in 1992 and the National Order of Scientific Merit (Comenda da Ordem Nacional do Mérito Científico) of the Brazilian Federal Government in 1995. Dr. Ernesto, as he was sometimes called by his associates at the University of São Paulo, was also Secretary General of the Federation of Latin American Chemical Societies (FLAQ).

Ernesto Giesbrecht continued the great effort and example of Heinrich Rheinboldt and Heinrich Hauptmann, and more than anybody else was the person responsible for the consolidation of the Chemistry Institute of the University

of São Paulo. In 1957, after his return from the United States, in collaboration with Madeleine Perrier and Geraldo Vicentini he founded what may be called the Brazilian School of Inorganic Chemistry, concentrating research in the area of actinide and lanthanide coordination chemistry. He trained approximately thirty research scientists in inorganic chemistry, who eventually spread chemical education and inorganic chemistry throughout Brazil. During his tenure as Dean of the Faculty of Philosophy, Sciences and Letters in Ribeirão Preto, he was instrumental in consolidating the Chemistry Department.¹⁻⁶

He published approximately one hundred and fifty papers dealing with alkaloids, compounds of sulfur, selenium and tellurium, chemical education and the chemistry of actinides and lanthanides. A detailed description of rare earth research at the University of São São Paulo that includes 173 references was given by Prof. Ernesto himself in a paper in collaboration with G. Vicentini and Lãa B. Zinner published in *Química Nova* in 1984.⁴ A partial list of Prof. Ernesto's publications was given in an article, published by two of his disciples, Aécio P. Chagas and Henrique E. Toma in 1991.⁵

In the area of chemical education, Prof. Ernesto Giesbrecht participated at all levels, including secondary school students and teachers, undergraduate and graduate programs and chemical instrumentation. In the 1960's he helped implement the Chemical Bond Approach Project and Chem Study throughout Brazil and Latin America. He was responsible for bringing to Brazil many highly qualified foreign faculty members.⁷ As we mentioned above, he participated and organized many national and international events on chemical education. Professor Ernesto believed that the great majority of the public and even secondary and university students were not conscious of the educational, social, economic and political importance of

of Chemistry.⁸ He spent a lot of his efforts trying to improve the image of chemistry and show its central role in the development of science and a harmonious life.

Prof Ernesto was Editor of the *Revista Iberoamericana de Educación Química* (1966-1975) and member of the Editorial Board of various journals including the *Anais da Associação Brasileira de Química* and *Anais da Academia Brasileira de Ciências*. Prof. Ernesto Giesbrecht was a Member of the Editorial Board of the *Southern Brazilian Journal of Chemistry* since its founding and always gave us help and encouragement.

We first met Prof. Ernesto in 1978 in São Paulo, a short time after our arrival in Brazil, coming at the invitation of the Brazilian Ministry of Education and Culture to help establish the Graduate Program in Physical Chemistry at the Federal University of Santa Catarina. Prof. Ernesto was kind, humane, courteous and always ready to help and give advice.

Prior to our coming to Brazil, we asked a famous chemist with whom we had the privilege to collaborate at the University of California about chemists and the state of chemistry in this country of continental dimensions. He told us that he knew of two great and good chemists in Brazil. The name of one of them was Ernesto Giesbrecht.

At our personal invitation, Prof. Ernesto Giesbrecht visited and gave seminars at the Federal University of Santa Catarina and the Federal University of Rio Grande do Sul. During his visit in Florianópolis, impressed by the exaggerated enthusiasm that some of us (young at the time) had about establishing the graduate program in chemistry, Prof. Ernesto warned us and another young Visiting Professor to proceed more slowly and with care because science and chemistry were still provincial in Brazil. An advice and a lesson of life, that Professor Ernesto gave us because of his friendly and humane character, that unfortunately we understood only many years later!

When the chemical community in Brazil was split by the formation of the Sociedade Brasileira de Química (SBQ), he tried

to do his best to reunite the two segments and always participated in the events organized by both societies. We last met Prof. Ernesto at the Annual Congress of the Associação Brasileira de Química (Brazilian Chemical Association) held in Recife, Pernambuco, undoubtedly one of the best chemistry meetings ever held in Brazil. Although his health was already failing, he made special efforts and served up to the end as a judge of research works presented by young scientists.

During the time that Prof. Dr. Ernesto Giesbrecht was Member and President of the Chemistry Advisory Committee of the CNPq (Brazilian National Research Council) all the research projects and research reports were duly evaluated and there was perfect communication between the CNPq and the scientific community. In more recent years, not following the good example, some of the members of the Chemistry Advisory Committee of the CNPq were glorifying themselves at scientific meetings for judging scientific projects and research reports without reading them and the communication between the CNPq and the scientific community was at best precarious, if not absent at all.

Prof. Ernesto leaves behind his wife Astrêa Mennucci Giesbrecht, who also holds a Doctors Degree and is a Professor at the Chemistry Institute of the University of São Paulo, their daughter Astartê and their son Ralph, and above all the legacy of a mission accomplished and well done.

Prof. Dr. Ernesto Giesbrecht was a great and friendly person who respected life and his fellow man and also was an outstanding chemical educator. Like all great teachers, he firmly believed that a teacher can teach best by his example. Prof. Ernesto may be considered the Father of Brazilian Inorganic Chemistry.

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