

# My case of Scherrer's dynamic influence

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## **My Case of Scherrer's Dynamic Influence**

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Upon my graduation as Mechanical Engineer, the late Dr. STODOLA selected me as one of his assistants. The work pertained mostly to gas turbines, leading to a suggestion of a project suitable for a Ph. D. thesis in the field of fluid dynamics. STODOLA suggested cooperation with the Physics Department. Presenting this program to Professor SCHERRER gave me the first personal contact with a man who for many years would come to guide my career.

In a second discussion, SCHERRER listened patiently and agreed to help supervise the work. Before ending the discussion, he remarked, in his typically casual way: 'You know, this is quite interesting. However, I thought of something else which you might want to consider before making a final decision.' He then explained a project on the then important question whether the Bohr model with distinct locations of the electron orbits is correct or whether the Schroedinger concept of the statistical distribution of charge is right. He suggested an experiment using the scattering of X-rays by gases. Finally, he handed me a text so that I might bring myself up to date in this field and dismissed me with the request to return in three weeks.

In our third meeting, I decided to follow SCHERRER's suggestion on a program of pure physics. SCHERRER had convinced me that basic work in the pure sciences would be more interesting. During following years, my quarters were in the basement of the Physics Institute. SCHERRER's visits, his encouraging help on experimental difficulties and his subtle guidance in rounding out my physics background helped in many dark hours when I was ready to give up in discouragement.

My closest contact developed during the period I acted as lecture assistant. Many of us who went through this phase will never forget the drive and unlimited energy, together with an amazing resourcefulness, which SCHERRER devoted to the preparation of his lectures. We assistants spent all of a day in setting up the innumerable experiments which were carefully devised by SCHERRER to demonstrate and bring home the next day some basic points of physics. There was no hesitation to try to

demonstrate the most recent developments. When FERMI announced his first neutron activation, the following week we demonstrated the activation of silver in SCHERRER's lecture.

After the assistant had labored all day to arrange the battery of projecting devices, SCHERRER would show up at eight in the evening to try out each demonstration. He would not hesitate to redo the whole thing if he could see a more convincing possibility. At the same time, this gave him an opportunity to rehearse the lecture. It was more common than unusual that the prelecture session lasted well beyond midnight.

These weekly experiences must have had profound influence on me and others like me who had the opportunity of spending these preparatory hours with SCHERRER.

During my years at the Physics Institute on the Gloriastrasse, the Biannual International Physics Conferences were established. They were distinguished by pertaining to a limited subject. Discussion papers were given by 'stars' which SCHERRER carefully selected and invited. I know of the effort it took on his part to promote the necessary funds – a matter which by today's recognition of physics seems unbelievable. In these meetings, not more than two or three papers were scheduled for each day. This created an atmosphere which was both relaxed and uninhibited during the long discussion periods. On sunny days some of the meetings were held at the beach along the lake. The meetings left a profound broadening of education with those privileged to work at the Physics Institute. At the same time, we became personally acquainted with leading physicists of the world. I personally was charged with making the detailed arrangements for the visitors and this helped a great deal in personal contacts which many years later opened my way in the United States.

SCHERRER was continuously concerned to increase the physics effort in Switzerland. He was convinced that the technological education in this field should be strengthened. He labored under the quite common limitation of funds. When he thought that a high voltage machine would be an important piece of equipment necessary to an institution like the Swiss Federal Institute of Technology, he devised a program of soliciting industry. We planned a lecture with special demonstrations through which he guided the audience to an understanding of the necessary step which yet had to be undertaken and for which he was looking for support. This and other appeals never failed to provide the modest sums of money. These amounts are dwarfed by today's projects in physics where sums of one hundred 'mega-bucks' are being spent for one machine.

SCHERRER and Professor WOLFGANG PAULI together attracted many young physicists, experimental and theoretical, to spend extended research periods at the Physics Institute at Zurich. The physics seminars

on Wednesdays were the gatherings in which these young people played an important scientific role. Most of them have long since become leaders in physics throughout the world.

This background picture of the activities in the Institute can merely give a sketch of the stimulating influence of SCHERRER's leadership. As one of his students and co-worker for many years, my progress in science and later in industry is a reflection of his dynamic character. I wish that for many more years the 'elder statesman of Swiss physics' may enjoy the fruits of his work and be able to contribute further to the high standing of education in Switzerland.