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Reminiscence of Wolfgang Pauli

I thoroughly enjoyed Valentine Telegdi's review (PHYSICS TODAY, November 2003, page 67) of the Wolfgang Pauli biography *No Time to Be Brief*, written by Charles P. Enz. It brought back memories of my time as a graduate student in Zürich from 1949 to 1953. I first met Telegdi when my friend Hans Mollet invited me to go with him and Telegdi to a Louis Armstrong concert in 1949.

Mollet and I were graduate students at the Physical Chemistry Institute at the University of Zürich, and our mentor was Klaus Clusius. In the institute's seminars, I usually sat with Wolfgang Pauli Sr, who knew professionally both my father and grandfather. Pauli Sr was a most pleasant and kind gentleman, and both my father and Clusius pointed out the contrast between his personality and that of Pauli Jr.

Our group of graduate students often wandered to the physics colloquia at ETH Zürich. Pauli usually sat in the first row. I witnessed his strong objections during a colloquium by Ralph de Laer Kronig. I also have vivid memories of Pauli's approving nods during Victor Weisskopf's presentation. For each of two colloquia that I presented, I was very relieved that Pauli didn't start shaking his head, criticize me, or walk out.

After reading the review, I picked up the book, which I read with great interest.

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More Perks of Industrial Physics

Like Arthur Jensen, whose letter appeared in the December 2003 issue of PHYSICS TODAY (page 19), I also had very positive experiences as a physicist working in industry. Experimental physicists should be very much at home there, addressing such projects as designing new equipment for special analytical techniques, solving an everyday commercial problem, or explaining a fundamental science question. My job was not work; it was a playground where I could make up many of the rules.

My colleagues and I were designing static SIMS (secondary ion mass

spectrometry) equipment before most people had heard of the term. At times I worked in the commercial field, salvaging multimillion-dollar electronic equipment installations after fires, floods, and general contamination events. Another time, a scientific explanation of why copper is such a good material for making general commercial electrical wiring and connections was published on its first submission to *Physical Review B*. Other projects ranged from single crystal surface analysis in ultrahigh vacuum to seeing what was under the mud on the surface of a circuit board after a flood. If you want to work on a variety of problems, go into industry.

The best perk is that I did not usually have to write proposals to obtain funding. Back in the 1970s to 90s, a short walk to management's office and a "back of the envelope" discussion were sufficient to find time and money to do what I wanted. Money may be harder to come by today, but companies are still interested in learning why things do or do not work.

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Hydrogen Is Energy Carrier, Not Source

In "Hydrogen-Based Energy Merits Research" (PHYSICS TODAY, October 2003, page 35), reporter Jim Dawson has fallen into the same trap so many writers of hydrogen articles do. Hydrogen is not an energy source. It is a carrier of energy. For hydrogen to replace fossil fuels, extremely large-scale programs of solar power, wind power, fission, or fusion must be developed to produce it. This major factor is not mentioned in the article; in fact, it seems also to have been omitted in the Department of Energy report. Perhaps the PHYSICS TODAY article should have brought that out.

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Correction

April 2004, page 51—Julio Fernandez was the one who, with Wing Ip, examined the interaction between Neptune and the small bodies left over after the formation of the giant planets. ■