



PAUL EPSTEIN

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PAUL S. EPSTEIN came to Caltech as Professor of Theoretical Physics in 1921. Except for a brief trip in 1913, he had never been in America before. He had studied and taught at some of the great European universities—Moscow, Munich, Zurich, Leyden—and in Pasadena he felt professionally isolated. To keep in touch, he decided, he would have to go back to Europe at least every two years. But he never had a chance to carry this program out. Gradually, the physics group at Caltech grew to be one of the most stimulating in the world.

One of the main reasons for this was the presence of Paul Epstein himself. At Caltech he has not only contributed enormously to the scientific development of his students, but to that of his colleagues as well. His eminence and authority extend well beyond the field of physics, and science, into such diverse fields as philosophy, psychoanalysis and art. He is, in the true sense of the word, a scholar, and his field of interest is the whole field of knowledge.

His regular reading, for example, includes scientific journals and publications in Russian, German, French and English. When he has exhausted these, he relaxes with the *Encyclopedia Britannica*, which he is reported to be steadily working his way through.

His encyclopedic knowledge is a source of constant astonishment on the campus, as it was to the colleague who once made a wildly inaccurate statement concerning, of all things, cheese-making, in Epstein's presence. He was calmly deluged with a jumbo assortment of accurate facts about it.

"Just my luck," the man said later. "He was probably on 'C' in the *Encyclopedia*."

But Epstein's uncanny memory is a source of equally constant astonishment.

"I happen to know," another colleague explained, "that he's on 'M' by now."

He first became interested in psychoanalysis in 1912, when he met the great Freud in Switzerland. As usual, there was nothing idle about this interest, and he is even reputed to have carried it to such an extent that he was able to analyze himself. True or false—if *anyone* has ever done it, it would have been Paul Epstein.

He was born in 1883 in Warsaw, Poland, which was then in Russia. His parents died when he was quite young, so that he was largely raised by his grandparents in Minsk.

Education wasn't taken for granted in those days, and in that place. At the age of nine Paul was eligible to take the entrance examinations for the local school, run

by the central government, in Minsk. A good many of the students dropped out of school after the eighth grade because they could then go into the army, and eventually become officers, but Paul went on to the end.

In 1901 he entered the school of mathematics and physics of the University of Moscow. He was one of 60 students accepted, out of a total of 300 applicants. The school of mathematics and physics was the smallest of the separate schools (biology, chemistry, history, etc.) which made up the University of Moscow. The law and medical schools were the largest, with about 2,000 students each, and total registration at the University was between 9,000 and 10,000.

All students were rigidly disciplined, and had fatigue uniforms for everyday wear, with splendid dress uniforms for special occasions. Despite the discipline, however, there were frequent and violent student disturbances, for these were the years leading up to the Russian Revolution. In 1905, the year of the first revolution, classes at the University had to be discontinued entirely. Paul worked through the year in the laboratory, boarding in a private home near the University.

The University reopened in 1906, and after he was graduated that year, Paul became an instructor in the physics lab of the Moscow Agricultural Academy in the suburbs, while he continued studying for his graduate degree at the University.

Aspirant to Magistant

In order to teach, which was what Paul intended to do, it was necessary for him to get the Russian master's degree, which would entitle him to become an assistant professor. The requirements for this degree were far more stringent than those for the doctor's degree in this country. First, a student had to be appointed an Aspirant—meaning that he was qualified to proceed. Then, two years after starting his graduate studies, he was admitted to the examinations for Magistant. There were five separate examinations, which had to be taken in the presence of the faculty—which met only about seven or eight times a year. The process took between one and two years, and if a man came through all five exams he had only to defend his thesis and make it public—and he was a Magistant.

Paul got his degree in 1909 and was appointed Assistant Professor of Physics at the University of Moscow. After a short term of service, however, he took a leave of absence and went to Munich to study under Sommerfeld.

He lingered on in Munich, getting frequent extensions of his leave. Actually, he had no intention of going back to Moscow. The threat of revolution hung over the country, work at the University was difficult, and, most important of all, it did not seem to Paul that the revolutionists had any more idea of freedom than did the Czar.

In 1913 Paul made a trip to America to see something of our universities. Being unfamiliar with Ameri-

can ways, he came in the summer when most of the universities were closed. So he went sightseeing across the country instead. At Berkeley, where the university *was* in session, he met Richard Tolman, later his friend and colleague at Caltech. In Pasadena, visiting friends, he journeyed to the Mount Wilson Observatory—by pack mule from Sierra Madre.

In 1914, still in Munich, Paul got his doctor's degree—fortunately just before war broke out. As an enemy alien he was interned for a short time, then released and allowed to continue with his research throughout the war, though he had to report daily to the police. In time, when every available man was in the German Army, he even began teaching again, but this had to be *sub rosa*; his name was not listed in the university catalogue.

Zurich, Leyden and Caltech

In 1919, after the war, Paul became Assistant Professor of Physics at Zurich University in Switzerland, then went to Leyden University as assistant to Professor H. A. Lorentz. It was there that he met R. A. Millikan, who was scouting for Caltech personnel, and in 1921 Paul came to the California Institute.

Except for two stints (1927-29) as Exchange Professor at the Aachen Institute of Technology he has been here ever since. Though he lost his desire early for a bi-annual refresher trip to Europe, after 32 years he still lends a European air to the Caltech campus. He is the guiding spirit of at least two informal evening discussion groups which are probably the best local substitute for those he used to lead in the Munich beer-halls. He writes English as well as most English professors, but still calls on colleagues to check his writing for Teutonisms.

"Is it because you still think in German?" a colleague once asked him.

"No," he explained, "I *think* in Russian, translate into German, and then write in English."

Some Honors

He is a Fellow of the American Physical Society, of the French Physical Society, and of the Russian Physical Society—"if they still keep me on." He let his membership in the German society lapse. He was a member of the National Research Council from 1928-30, and has been a member of the National Academy of Sciences since 1930. He is a Trustee of the Psychoanalytic Institute of Los Angeles, a Board Member of the Psychoanalytic Study Group of Los Angeles, President of the Jewish Academic Society of Southern California, Chairman of the Los Angeles Chapter of the Academic Council of the Friends of the Hebrew University, and a member of the Congress for Cultural Freedom—the international body recently set up to organize professional men, writers, scientists and artists in the fight against Communism.