

## MY MEMORIES OF JULIUSZ SCHAUDER

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*Dedicated to the memory of Juliusz Schauder*

My earliest memory of Juliusz Paweł Schauder (nickname: Julek) is of a teenager throwing cherry pits at a group of four little boys about eight to ten years old, younger than himself: these were his two brothers, my brother and myself. The time was a few years before the outbreak of World War I. The place was a town named Rohatyń, a district town near Lwów. (Lwów was then the capital city of the Austro–Hungarian province of Galicja, which became a part of Poland after World War I.)

The friendship between our families dated several generations back. In Rohatyń my great-grandfather had been a barrister and both the father of Julek and my father had been his “koncypient”, that is, apprentices in his law firm before they themselves became barristers. (In Austro–Hungary a doctor of law had to be a “koncypient” for seven years before being admitted to an examination whose passing was required for admission to the bar.)

Julek’s father, a hunchback, was respected by his fellow lawyers not only as a good practitioner but also as a theoretician who was publishing articles in legal periodics. Julek’s mother gave the impression of being a rather unhappy person (frequently her eyes seemed to be red from crying). He had two brothers: Marian (Mańko), who was one year older than I and later became a teacher of Physics in Italy, and Karol (Karolek), two years my junior, who later studied law; he also

had a sister, Andzia, who was closest in age to him and whose married name was Stadler.

My mother taught Andzia to play the piano while I was friends with Mańko until he left Poland in 1924 to study in Italy. After World War I, our families lived in Lwów, where Julek studied Mathematics at the university. The younger boys attended gymnasiums while our fathers continued their law practices in Rohatyń and commuted to Lwów on weekends. Julek's family lived in an apartment at Zielona 3, where I sometimes visited Mańko. Mańko was very proud of Julek's being a mathematician but himself was planning to study Physics.

Due to the age difference between Julek and me (which I estimated at ten years) there was little common ground between us as long as I was in the gymnasium. This changed completely after I started studying Mathematics at the University of Lwów. At that time Julek, whose father had died, was supporting himself as a gymnasium teacher at a small town named Przemyślany. He took an interest in me and sought me out whenever he visited Lwów. Much of my knowledge of his approach to Mathematics derives from conversations which we had during this period.

He told me then that his university study was delayed by his army service and that, to make up for lost time, he had read Hausdorff's book "Grundzüge der Mengenlehre" from cover to cover during the summer preceding his enrollment at the university. He had also read Goursat's "Cours d'Analyse" and worked out all the problems in it early in his study years. Some years later he and S. Mazur organized a two-person private seminar at which they worked out all the problems in the newly published book of Polya-Szegö.

These were but few examples of his extraordinary diligence in learning what was known to others in the field of his interests, as I could later ascertain at many occasions. What part of study he considered to be most essential, he once revealed to me in the following words: "It is not important to learn theorems. It is important to learn methods". At that time he felt so much in command of his mathematical power that he once boasted to me: "I could now write a paper like my dissertation every month". I remember how astonished he was when he discovered that somebody of about his age could be as erudite as he was. This happened once when we went together to what was then called the "Mathematical Seminar" at the University of Lwów. This was a suite of two rooms in an old building at the Mikołaja Street, in which the mathematical lectures were given. One of these rooms was a reading room and the other contained the departmental library from which books were checked out by an assistant. While I perused a book in the reading room, Julek was talking in the second room with the assistant Herman Auerbach. After

some time Julek emerged in the reading room with an expression of utter amazement on his face and uttered: "He knows even more than I do". It was known to many that frequently, when S. Banach was asked a mathematical question, he would say: "go to Auerbach, he will give you the answer".

I recall how once Schauder's mathematical patriotism was fruitfully aroused. It was the year 1928 and I was just back from a year of studies at the University of Göttingen. Julek asked me what the mathematicians at Göttingen thought of the mathematical work in Lwów. I replied that, unfortunately, some of the mathematicians to whom I had talked, did not seem to know what was going on in Lwów, while a few were condescending and wondered about the relevance of the work here for challenging areas of Mathematics such as partial differential equations. He became quite angry and said, "I shall show them." At that time he was a "docent" at the University of Lwów, hence entitled to lecture on topics of his choice. He announced a course of partial differential equations of the second order for the academic year 1928–1929. I attended some of his lectures even though I had taken a similar course from Hans Lewy in Göttingen a year earlier. My impression was that he was learning the subject matter by lecturing about what he had read in standard textbooks a while ago; it was a valuable preparation for his future work.

His approach to important matters of life was unusual. Once when we were taking a walk in a park he told me: "I am now approaching the age of thirty. This is a serious age, it is time for me to marry and to settle down. I would like to marry a girl studying Mathematics, preferably one knowing some foreign languages, so that she can help me to prepare my results for publication. Among your classmates I like the looks of only two girls: Miss X and Miss Y, but I have not met either of them. Tell me, which one of them do you think I should marry". I replied: "Marry Miss X". This he did, after confirming first with S. Banach my recommendation.

Miss X was Emilia (Mila) Löwenthal. She was a dark haired girl of delicate features and medium height, who was usually seated next to me in our classes. I treated her as "one of the boys" and developed a comradeship with her. She was an orphan, came from the town of Drohobycz and stayed in Lwów with her aunt. She had no mathematical ambitions but I considered her to be the most gifted one among the girls in our class. Julek's mother told me that she was unhappy about his choice since Mila had no dowry. I replied that the degree which Mila was likely to earn could be more valuable than a dowry.

Julek's financial situation was then precarious. The position of a "docent" carried no salary so that he had to rely on his salary as a gymnasium teacher. After his marriage he lived in a university apartment. However, Mila complained to me that she had to scrub floors since Julek could not afford to have domestic help (although maids were then inexpensive in Lwów). Julek's situation got really

bad when he lost his position at the gymnasium. He then became interested in the way I was earning my living.

When I was 23 years old, my father died and the support of my family became my responsibility. Due to the then prevalent conditions, the only way to discharge this responsibility was to give up the mathematical career intended by me for a more practical line of work. Therefore, I returned to the University of Göttingen, earned there a certificate as an actuary, got some practical actuarial experience in Vienna at the Head Office of an Austrian insurance company and was appointed Chief Actuary of the Polish branch of this company at its Head Office in Lwów.

For Julek an exact duplication was not possible. However, somehow he managed to get a job with an office of the Italian insurance company "Riunione Adriatica di Sicurtà" in Lwów. The ensuing experience was unhappy for both him and the company. He told me: "Not only could I do no Mathematics during this period, but also the entire year after".

Thereafter things started looking up for him. First he got a teaching position at a gymnasium in Lwów. Then I heard that an assistantship at the University's Mathematics Department was being vacated by a former classmate of mine named Ignatowicz. I so informed Julek who succeeded in securing the assistantship for himself. Thus he drew two salaries and could live comfortably.

Meanwhile, my career had brought me more and more to Warsaw where I spent two weeks of each month from 1935 to 1937 and where I was completely transferred in 1937. Consequently, I saw Julek less and less.

The last time I heard about his fate, the world situation had completely changed. When Poland was invaded in 1939, I was abroad on a business trip for my company. Thus cut off from my family and my native country, I spent World War II in Zürich, Switzerland, where I got my doctorate and habilitation at the Eidgenössische Technische Hochschule (E.T.H.) and taught Mathematics at a field university for Polish military internees in Winterthur. My contacts with the E.T.H. enabled me to learn about a last message from Julek. Several months after the Germans had occupied Lwów in 1941, I was told by Heinz Hopf, the topologist and professor at the E.T.H., that a letter from Julek, addressed to the Swiss mathematicians, was brought by a Polish student who escaped to Switzerland. Julek wrote that he had many important new results but no conditions to write them down and that he feared for his life. He implored the Swiss mathematicians to request the German physicist Werner Heisenberg (whom he knew from his stay in Leipzig in 1932–1933) to intervene with the German authorities so that Julek's life be spared. H. Hopf, who had met Julek at the International Topological Conference in Moscow in 1935, told me that the Swiss mathematicians had relayed this task to the Zürich physicist Scherrer who had written a letter to Heisenberg. What happened to this letter is

not known since it remained unanswered. Known is only that both Julek and Mila have been murdered by the Germans.

*Epilogue:* During my stay at the Institute for Advanced Study in Princeton in 1953–1954, Professor Jean Leray told me that Julek's daughter Ewa (born either in 1937 or in 1938) survived the war, being saved by nuns in a convent, and was brought to Paris after the war. At first Mańko refused to take her to his home in Pisa since she was tuberculous and thus could communicate this disease to his children. After some time Mańko ultimately admitted Ewa to his home. Several years ago during my visit to Italy I tried to reach Mańko by long distance phone, but was told that he had passed away. I learned also that Ewa was alive and was working as a high-school teacher in Milano.

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