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Beloslav Riečan
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NEWS AND NOTICES

ŠTEFAN SCHWARZ
(1914–1996)

BOLESLAV RIEČAN, Bratislava

The life pilgrimage of Professor Schwarz was terminated on Friday December 6, 1996, after he had lost consciousness on Monday November 18, and never regained it again. Professor Schwarz was granted the privilege to work until the last minute: on the fatal Monday, before he fainted, he had been writing mathematical paper. In spite of his goodly age (he was born in Nové Mesto nad Váhom on 18th May 1914), his departure was unexpected for all of us who had the opportunity to see him regularly during the last years, months, even days.

An outstanding mathematician on an extraordinary international significance, a word-famous one; a pedagogue with an uncommon ability to present transparently and understandably even the most complicated mathematical stuff; a personality, whose educational activity influenced several generations of Slovak technicians and scientists; a scientific worker taking part in the development and organization of both the Slovak and Czechoslovak science, a supporter of the conception fostering quality of scientific work and its international context. From all these characteristics, if I were to choose one, the unique, crucial and may be the determining word, I would say “a Mathematician”. Mathematician in the most proper, the deepest, that is to say the humanist sense.

A poor boy from Nové Mesto showed his talent already at the secondary school and in the correspondence competition of the journal “Rozhledy matematicko-fyzikální” (Mathematical-physical horizons), he later fully developed his abilities at Charles University in Prague under the supervision of Karel Petr, a forefront representative of the Czech mathematical school. Shortly after his graduation in 1936, he obtained the doctoral degree and became Lecturer at Charles University. However, political changes brought him back to Slovakia in 1939.

Here, at the Slovak Technical University, in the hectic time of World War II, when at every moment he lived in a menace of deportation to a concentration camp, hence in the time of stress and danger, he took refuge in mathematics and, offering

simultaneously his time to students, developed a theory which later made him famous all over the world. In 1943, he wrote the dissertation *Semigroup Theory*. (By the way, he did not succeed in escaping deportation; it occurred in November 1944. He was liberated from a German concentration camp in April 1945, while his two sisters died there.)

Professor Schwarz is respected by the whole algebraic community as one of the founders of the semigroup theory. However, the field of his scientific interests was more extensive. It included finite fields theory, semigroup theory, Boolean and stochastic matrices, harmonic analysis and number theory. And his general and not only mathematical education was even broader. He belonged to the most educated and well-read mathematicians.

He devoted himself to mathematics not for profit, but for mathematics itself, which was his greatest reward. He did not solve problems in order to publish something, nevertheless he published more than 100 papers, sought for and cited till now. He was not publishing to receive response, nevertheless, the list of his citations is the richest among all Slovak mathematicians. If he regretted something during his last years of life, it was the fact that his spontaneous interest in social events prevented him to devote to mathematics as much time as he would have liked to.

He was not competing for functions, but what could he do? He was Vice-Dean and Vice-Rector of the Slovak Technical University, Vice-President and President of the Slovak Academy of Sciences, Vice-President of the Czechoslovak Academy of Sciences, Chairman and member of every possible body. Nevertheless, also in the times of his activities in very demanding functions and simultaneously of extensive teaching activity, he studied mathematics and solved mathematical problems every evening.

It will take much time before Slovakia will have again such a scientist and pedagogue as Professor Štefan Schwarz was. He linked his bright mathematical talent with an original pedagogical approach. He was a born teacher. Even his first serious interest in mathematics was of pedagogical motivation: trying to find out why his older sister was not very good in mathematics, he secretly began to study her textbooks. He was lecturing with zest, and his lectures, and even exams, were unique experiences for his students. Many bonmots have been going round concerning his pedagogical activity. For example: "If you do not understand Professor Schwarz's lectures, change your subject of study". Or: "No sooner than on the third day after Schwarz's explanation you will find out that you do not understand anything".

Schwarz's books "On Equations" and "Algebraic Numbers" set an extraordinarily high standard on our scientific-popular literature. It was from these books that several generations of our young people learned mathematical thinking.

His activity in the Editorial Board of the journal *Mathematica Slovaca* had also a pedagogical aspect. He was one of the founders of this journal in the fifties, he was its Editor in Chief until 1989, and until the last moments of his life he was anxious to maintain its level. He was strict with foreign authors, and demanding to the native ones, but he simultaneously required they should be offered encouragement and advice.

Pedagogical abilities of Professor Schwarz can be seen in his activities at scientific seminars. Not allowing superficiality, he demanded a thorough penetration into the depth of problems, based on dozens of examples. In this way he led his students and colleagues to creative work. His scientific papers are like that, too: clear, easy to understand and simultaneously including deep results.

It was probably through his lectures for postgraduate students that Professor Schwarz built for himself the biggest monument in the area of education. Lectures were officially intended for postgraduate students, but “everybody” attended them, from postgraduate students to professors: it was part of “bon ton”. The attractiveness of these lectures consisted in their subject, considerably applicable but simultaneously deeply mathematical. They were held during the years 1962–1966 and 1970–1981.

Professor Schwarz not only taught, but also led a relatively large group of teachers of mathematics. Immediately after habilitation (becoming Associate Professor) in 1946, he assumed the Chair of the First Department of Mathematics at STU—Slovak Technical University. He became Professor in 1947. In 1951, all departments of mathematics of STU were merged into one Department of Mathematics of STU, with Professor Schwarz as its Head. Two of his pupils later counted that 14 mathematicians from among the members of this Department became professors of mathematics later. No comment is necessary. He kept the Chair until 1979, having taught for 45 years, until 1982.

A break in his postgraduate lectures was due to his activity in a top position at the Slovak Academy of Sciences. He became a regular member of the Slovak Academy of Sciences in 1953, a corresponding-member of the Czechoslovak Academy of Sciences in 1952, and a regular member of the Czechoslovak Academy of Sciences in 1960. In the years 1965–1970 he was President of the Slovak Academy of Sciences and Vice-President of the Czechoslovak Academy of Sciences. A determining characterization of his activity in the Presidiums of the Slovak and the Czechoslovak Academy of Sciences was his ability to distinguish between essential and negligible, and to devote his time to solving the crucial, most important problems. (He had a sense for detail and a good memory: for example, he patiently and persistently corrected inaccuracies in various historical data.) A further important point was that he did not terminate his scientific and pedagogical activities. Besides his already mentioned top values in

both areas, it had also another effect: he kept contacts with “ordinary” people, not only with VIPs and administrators. The period 1965–1968, where he was President of the Slovak Academy of Sciences, was an era of great hopes in both scientific and social area, which, however, became true only partially.

One of important issues Professor Schwarz cared about was a supply of scientific information. At both institutes he chaired he established scientific libraries of what then represented the top level. To asquire information, he benefited also from the international exchange of our journal *Mathematica Slovaca* for foreign journals. In the latest years, it was difficult for him to bear that “we had to give up the forefront journals, to say nothing about books”.

During his 82 years of life he was awarded many top scientific and pedagogical awards. However, the greatest reward was the respect of the international scientific community as well as the love and admiration of thousands of his students.

He died in the middle of his work, with his boots on. And so we, who had the possibility to see him regularly during the last years and to work beside him, will miss him all the more. We naively hoped that he would stay here forever, as if he had been a counterexample to statistical laws of Nature. Mobile and brisk, a fixpoint in the course of our daily life, he was not only a world-known scientist and an unforgettable pedagogue, but also a very approachable person. The gap which remains after him will be difficult to fill. Nevertheless, at our every act we shall and will ask ourselves what Professor Schwarz would say. In this way he will remain forever with us.

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