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European Mathematical Society Newsletter 8 (1993), 5-7

Persistent URL: http://dml.cz/dmlcz/501175

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This year we observe the 100th anniversary of the birthday of Eduard Čech, one of the leading world specialists in topology and differential geometry. To these fields he contributed works of fundamental importance.

He was born on June 29, 1893 in Stračov in northeastern Bohemia. During his high school studies in Hradec Králové he became interested in mathematics and in 1912 he entered the Philosophical Faculty of Charles University in Prague. At that time there were very few opportunities for mathematicians other than to become a high school teacher. For a position of a high school teacher two fields of study were required. Since Čech was not much interested in physics, the standard second subject, he chose descriptive geometry. During his studies at the university he spent a lot of time in the library of the Union of Czech Mathematicians and Physicists and read many mathematical books of his own choice.

In 1914 the First World War broke out and in 1915, after three years of study, Čech had to leave the university for the army of the Austro-Hungarian Empire. He stayed in the army for three years and used this lost time to learn languages, namely German, Italian and Russian. He completed his studies in the school year 1918–1919 and passed the state examination which entitled him to teach mathematics at high schools. In the years 1919–1923 he taught mathematics at several Prague high schools. In 1920 he received a Ph.D. from Charles University.

In the year 1921 his first paper appeared and so began the first Čech's research period devoted to projective differential geometry. It lasted till 1930. It is an important feature of Čech's research activity that he always worked in new, developing fields. Of course, a lot of other people did the same; however, Čech always very soon obtained major results whose importance is not diminished by passing years.

Upon request Čech obtained some funds from the Ministry of Education, took a leave of absence, and spent the school year 1921–1922 in Torino with Guido Fubini. Čech must have impressed Fubini considerably since he offered Čech to become a coauthor of a book on projective differential geometry. Bear in mind that it was an offer made by a well-known scientist to a young Ph.D. who was only a provisional high school teacher at that time. The cooperation between Čech and Fubini was very fruitful. In 1926 and 1927 the two volumes of the book Geometria proiettiva differenziale were published in Bologna. In 1931 they published another joint book, Introduction à la géométrie différentielle des surfaces, this time in Paris. Altogether Čech published in this period 37 papers on differential geometry and 3 books. Besides the two joint publications with Fubini his Projektivní diferenciální geometrie (Projective differential geometry) appeared in 1926.

After his return from Italy Čech submitted his habilitation thesis and in 1922 he became a docent of Charles University. This was just an academic title so he continued teaching at a Prague high school.

At this time Professor Lerch of Masaryk university in Brno died. Brno is the second largest city of the Czech republic, the capital of Moravia, and after the Czechs gained independence

from Austria in 1918 the second Czech university was established there in 1919, named after the first president of the republic Tomáš Garrigue Masaryk.

Čech was offered and accepted the vacant position and in 1923 became extra-ordinary professor at the Faculty of Natural Sciences of Masaryk University; he became a full professor in 1928. Lerch had held the chair of analysis and the chair of geometry was held by Professor Seifert. Hence, although geometry was Čech's field of research, Čech had to take over courses in analysis and algebra. He proceeded to master these two fields.

We may observe here one of Čech's basic characteristics. Whenever he was doing something in mathematics, he always strove to achieve thorough understanding of the subject. The result was that even outside of his fields of research he had extensive knowledge and deep insight in many other areas of mathematics.This feature of his personality also had some other consequences. While he was not conceited and talked easily to people with little formal education, he expected in his fellow professors the same qualities he himself possessed. This did not contribute to smooth relations with some people as he was not diplomatic, but, on the contrary, quite forthright in expressing his opinions.

His study of algebra and analysis brought his attention to other fields of mathematics. In particular, he became interested in topology. From 1930 to 1947 he worked in topology and published 31 papers, 29 in algebraic and 12 in general topology. Let us mention his participation at the International Congress of Mathematicians in Zürich in 1932 where he presented the complete definition of higher homotopy groups which were later independently introduced by Hurewitz. In 1935 he was invited to attend the prestigious Moscow conference on combinatorial topology and he spent the school year 1935–1936 at the Institute for Advanced Study in Princeton.

After he returned from the U.S.A. he started his famous topological seminar in 1936. Why famous? Up to Čech's seminar, seminars in Czechoslovakia were held only for undergraduate students as part of their studies and mathematical research was done by individuals. The now standard form of small groups working together was started here by Čech. The seminar on general topology was very successful; its participants published 27 papers in the three years it existed. Its work ended in 1939 when the Nazis closed the Czech universities. Čech then continued to meet with the two principal participants, B. Pospíšil and J. Novak, in Pospíšil's flat until Pospíšil was arrested by the Gestapo in 1941. Pospíšil died soon after his release from Nazi prison in 1944. Thus Čech lost his best student.

During the war, Čech worked on his book Topologické prostory (Topological Spaces) which was later rewritten and published in 1959. At this time he also became deeply interested in high school mathematics. He held seminar for high school teachers and he wrote several high school textbooks on algebra and geometry which are even now remembered for their superior qualities. After the war he became very much involved in a reform of schools which introduced a unified high school similar to the English comprehensive school. He chaired the commission charged with instruction in mathematics.

After the war Čech moved to Prague and was appointed professor at Charles University in 1945. He remained at the University till the end with the exception of the years 1950–1953 when he was granted a leave of absence.

He became the leading personality in Czech mathematics. In 1947 the Czech Academy of Sciences and Arts established the Mathematical Institute and Čech was appointed its director.

This institute had only a secretary and one research assistant, the members of the Institute were employed by the University or by the Czech Technical University. In 1950 the government created the Central Mathematical Institute and Čech again became its director. This institute replaced the former one but this time it was a regular research institute with many research workers and graduate students. When the Czechoslovak Academy of Sciences was founded in 1952, this institute became the Mathematical Institute of the Academy.

In 1953 Čech realized he could not do much more for the Institute and returned to the University. He had indeed done enough. The Institute was well established, its structure and purpose fully determined, and many of the students who would later on become leading Czech scientists already admitted to graduate study at the Institute.

In 1950 Čech started publishing again and he returned to his most favored topic, differential geometry. He published during this last period 21 papers. That does not mean he neglected the welfare of Czech mathematics. Already in 1953 he initiated the creation of the Mathematical Institute of Charles University; the institute was established in 1956 with Eduard Čech as its first director. Unfortunately, his health started to deteriorate and he died on March 15, 1960. Even when already gravely ill, he performed two further important services for Czech mathematics. He founded the journal Commentationes Mathematicae Universitatis Carolinae, the first issue appeared in 1960, and he came up with the idea of organizing in Prague an international topological conference. The conference took place in 1961 under the name Symposium on General Topology and its Relations to Modern Analysis and Algebra. Since then, every five years there has been a Prague Topological Symposium.

In spite of the heavy load created by his involvement in the organization of Czech mathematics he published altogether 94 research papers and 11 books.

Another feature of Čech's personality is that philology was his hobby. He greatly influenced Czech mathematical terminology and he learned many languages. He wrote papers in French, Italian, German, English and Russian and he continued the study of languages till the very end; before his death he started to learn the Romanian language.

Finally let us mention some of the honors that came his way: he was a member of the Polish Academy of Sciences, he received honorary doctorates from the University of Warsaw and the University of Bologna, he was a member of the Royal Czech Society of Sciences, Czech Academy of Sciences and Arts, Czechoslovak Academy of Sciences and honorary member of the Union of Czechoslovak mathematicians and physicists. He twice received the State Prize and was awarded the Order of the Republic.

As you may have noticed there are few things in present Czech mathematics which are not due to the activity of Professor Eduard Čech. There are two reasons for his unique position in the history of Czech mathematics, his deep and extensive understanding of modern mathematics and the fact that his decisions were based on the needs of Czech mathematics and not on his personal preferences.