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Eduard Čech 1893 - 1960

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# EDUARD ČECH

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1893 – 1960

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The greatest Czech mathematician, Eduard Čech, was born on June 29, 1893 in the small town of Stračov in northeastern Bohemia. In 1920 he received his PhD from Charles University in Prague. After three years of high school teaching, he was appointed an extraordinary professor at Masaryk University in Brno in 1923; he became full professor in 1928. He worked there till 1946 except for the war years when the Czech universities were closed by the Nazis. After World War II he moved to Prague as a professor at Charles University where he stayed till his death on March 15, 1960. In the years 1950–1953 he had a leave of absence from the University to become the first Director of the Mathematical Institute of the Academy.

E. Čech has made fundamental contributions to differential geometry and algebraic and general topology. In 1921/1922 he spent a year in Torino, working with G. Fubini. They wrote “*Geometria proiettiva differenziale*” which appeared in two volumes in 1926 and 1927. Later, in 1931, they published “*Introduction à la géométrie projective différentielle des surfaces*”.

During the thirties, Čech worked in topology. His contribution to algebraic topology includes the definition of homology and cohomology for general topological spaces, and the introduction of the notions called nowadays the Čech homology and cohomology groups. In the dimension theory, Čech extended the classical Lebesgue and Brouwer dimensions to a wider class of spaces and showed the validity of many basic theorems on dimension for as general as perfectly normal spaces. In 1937, following his 1935/1936 stay at the Institute for Advanced Study in Princeton, E. Čech introduced the unique maximal compact space containing a completely regular space densely, known as the Čech-Stone compactification. The concept was independently discovered in the same year by M. H. Stone.

From among Čech's books, it is necessary to mention "Projektivní diferenciální geometrie" (Projective differential geometry, 1926), "Bodové množiny" (Point sets, 1936), two volumes of "Základy analytické geometrie" (Foundations of analytic geometry, 1951 and 1952) and "Topologické prostory" (Topological spaces, 1959) which influenced two generations of Czechoslovak mathematicians.

Besides his brilliant results, E. Čech had a profound influence on Czechoslovak mathematics in many other ways: he led the topological seminar at Masaryk University (1936–1939), founded the Mathematical Institute of the Czechoslovak Academy of Sciences (1950) and the Mathematical Institute of Charles University (1956). He also founded the journal *Commentationes Mathematicae Universitatis Carolinae* (1960) and the Prague Topological Symposia (the first was held in 1961).

Honors also 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 an honorary member of the Union of Czechoslovak mathematicians and physicists. He twice received the State Prize and was awarded the Order of the Republic.

This year the book "Mathematical Legacy of Eduard Čech", edited by M. Katětov and P. Simon, will be published by Academia and Birkhäuser Publishing House. The book surveys the development of Čech's mathematical ideas from his times till today.