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Anton Kotzig 1919-1991

ANTON KOTZIG 1919—1991

Anton Kotzig, an eminent graph theorist and combinatorialist, retired professor of mathematics at the Université de Montréal, died on April 20, 1991, after a courageous battle of several months with cancer.

Anton Kotzig was born October 22, 1919, in Kočovce, in the Slovak part of Czechoslovakia, where his father was director of the village school. After completing his high school studies in Nové Mesto nad Váhom, he enrolled at Charles University in Prague to study Mathematics and Physics. When the Nazis closed the Czech universities in November 1939, he was forced to interrupt his studies and return to Slovakia. He completed his studies after World War II and obtained his doctorate in mathematics in 1947 at Komenský University in Bratislava. His thesis dealt with non-parametric tests: correlations between two statistical variables, measured by the number of inversions in the corresponding permutations. In 1961 he was granted the degree of Doctor of Science, the highest possible scientific degree in Czechoslovakia, from Prague's Charles University, for a thesis on connectivity and regular connectivity of finite graphs.

In his native land he was entrusted with important responsibilities. From 1940 to 1948, he worked as a statistician for the Central Bureau of Social Insurance for Slovakia, where he was chairman of the Department of Mathematics and Statistics from 1942 to 1948. In January 1949 he was appointed director of the Department of Economics, Classification and Control at the Slovak National Bureau for the Purchase and Distribution of Agricultural Products. He left this occupation in 1951 to become professor at the Bratislava University of Economics, where he stayed until 1959 and served as rector from 1952 to 1958. These two decades of his life were thus spent in constant contact with the applications of mathematics.

In 1959, he left the Bratislava University of Economics to head the new Mathematical Institute of the Slovak Academy of Sciences, of which he remained the director until 1964. He was then appointed director of the Department of Applied Mathematics at the Komenský University in Bratislava and held this position until 1969. In 1965–66, he also served as interim dean, for one year, of the Faculty of Science at the same University.

Professor Kotzig managed to maintain a high level of research activity in mathematics throughout these long years of administrative duty – a remarkable achievement. In 1969, his list of publications included more than sixty papers in research journals and four books: his Prague thesis, a book on mathematical methods in economics published by the Academy of Sciences, Bratislava 1961, a mathematical outline of a dynamic model for a centrally planned economy and a "Foundations of Higher Mathematics" handbook. He was also editor– contributor of a "Small Encyclopedia of Mathematics"; all these books were published in Slovak.

Several of his results obtained during the 50's and the early 60's, for example, those on connectivity of graphs, on 1-factors, and on cubic graphs, have become classics. As they were published in Slovak, however, it often took a long time for them to become well known, and many of these results were rediscovered much later by others.

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For his abundant research in mathematics and for certain applications that proved to be very important in practice, he received the highest honors granted to scientists in his country. In 1965, it was the Czechoslovak Order for "outstanding contributions to the country". In 1966, he was awarded the Prize of the Czechoslovak Academy of Sciences for his "excellent scientific and educational activities" and, in 1969, the Czechoslovak State Prize "for the development of powerful mathematical methods in macroeconomy".

Anton Kotzig came to Canada in the summer of 1969. After spending one year at the University of Calgary he accepted an invitation to join the newly formed Centre de recherches mathématiques (CRM) at the Université de Montréal. He remained at the Université de Montréal, first at the CRM, then at the Département de mathématiques et de statistique, even after his retirement, until his untimely death.

The worsening of the political situation in Czechoslovakia in 1970, with its accompanying "normalization", was instrumental in his decision to remain in Canada. These circumstances had deprived him of his personal notes, his collection of books and reprints. He had to start again "from square one", so to speak, in an unfamiliar country, none of whose two official languages he then mastered well. Above all, he was separated from his team of collaborators that had gradually gathered around him over the years in Czechoslovakia. He faced the challenge with such flexibility and vigor that, since 1969, he has published more than 75 papers and successfully directed several M.Sc. and Ph.D. theses. His publications deal with a wide variety of topics: convex polyhedra, optimization, Hamiltonian and strongly Hamiltonian graphs, various labellings of graphs, magic squares and magic stars, latin squares, quasigroups defining special decompositions of complete graphs, perfect systems of difference sets, additive sequences of permutations, tournaments and combinatorial games.

Throughout his career he has been collaborating with other mathematicians; he was particularly successful in introducing young people to research in combinatorics and graph theory through posing intriguing problems. His numerous collaborators form a network spanning a large number of universities in Canada and around the world: Montréal, McGill, UQAM, UQTR, Collège militaire royal de Saint-Jean, McMaster, Toronto, Waterloo, Calgary, Halifax, Simon Fraser, Auburn, Paris, Grenoble, Budapest, Haifa, Bratislava and Prague.

On the occasion of his 60th birthday he was honored by a Festschrift in the series "Annals of Discrete Mathematics", Volume 15, 1982, entitled "Theory and Practice of Combinatorics". The contributors of this volume reflected the international character of his group of collaborators and the articles in this Festschrift mirrored the wide variety of the topics related to his own recent work.

His published collections of open problems provided an inspiration to many mathematicians; not too surprisingly, there is a long parade of papers having his name in the title. On the other hand, some of his problems, such as the famous Ringel-Kotzig conjecture, remain unsolved to this day.

We would like to point out that there exist other articles honouring Anton Kotzig's contribution and achievements: J. Bosák's article in Matematický Časopis (today's Mathematica Slovaca), Volume 19 (1969), p. 248 on the occasion of his 50th birthday, J. Turgeon's article in La Gazette des Sciences Mathématiques du Québec, Volume 4 (1980), Nr. 2, 4-7 on the occasion of his 60th birthday, and, of course, the Preface to the above mentioned Festschrift.

Everybody who came in close contact with Anton Kotzig was impressed by his personality. He came across as a warm and caring person. He was generous with his advice. His courses were very popular with the students and the way he transformed a moribund course into a success story with 110 students speaks for itself. It is not without interest that a few of his collaborators were drawn to him throught their common love for chess.

He was a devoted family man. He leaves behind his wife Edita to whom he was happily married for 47 years, and one son. He will be sadly missed by all who knew him and, in fact, by the whole combinatorics community.

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