Tibor Neubrunn (1929 – 1990)

English summary

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Tibor Neubrunn was a significant Slovak mathematician. He was born in Veľká Hradná, on August, 2, 1929. He studied mathematics at Comenius University in Bratislava and already during his studies he started working at the Faculty of Natural Sciences as an assistant. Later he became an associated professor and he obtained full professorship in 1980. His scientific contribution lies mainly in measure theory, real functions and set valued functions. He was also very fond of teaching mathematics, besides his main field – measure theory – he taught courses on set theory or functional analysis. He died at age 61 in 1991, however, he still lives in memories of his students. Many of them contributed to this publication with memories published in the first part of this book which together with memories of his family members give substantial facts about his life and work. The second part is devoted to his scientific results.

His scientific activities were influenced by a monograph of P. R. Halmos; Tibor's first works are from measure theory. Beyond other, he gave a construction of measure from a content, he dealt with absolute continuity and dominancy of measures. A survey of related papers is given in Section 1.

Another field where his scientific contribution is important is the field of real functions. In this direction he initiated research which has been very successful. Together with his doctoral students he studied generalized continuities, closed graphs and set valued functions.

One of the most important notions of generalized continuity is the notion of quasicontinuity. Perhaps the first mention of the condition of quasicontinuity can be found in the paper of R. Baire from 1989 in the study

of continuity points of separately continuous functions from R^2 into R. The notion of quasicontinuity was introduced by Kempisty in 1932 for real functions of several real variables.

Quasicontinuous functions are very important in many areas of mathematics. They found applications in mathematical analysis, in topology, in the study of minimal usco and minimal cusco maps, in the study of topological groups, in proofs of some generalizations of Michael's selection theorem, in the study of extensions of densely defined continuous functions, in the study of dynamical systems and there are also some probabilistic connections.

One of the most important and the most cited paper of Professor Neubrunn is the paper "Quasicontinuity", which appeared in Real Analysis Exchange in 1989. The paper is a survey of important results about quasicontinuous mappings and quasicontinuous multifunctions obtained till 1988.

Professor Neubrunn initiated the study of quasicontinuous mappings and quasicontinuous multifunctions in Slovakia and he also led in this direction many of his doctoral students. A survey of his results and results of his students in the field of quasicontinuous mappings and quasicontinuous multifunctions is given in Section 2. In Section 2 there are also results of Professor Neubrunn concerning set-valued functions with closed graphs and a very useful characterization of minimal usco maps via quasicontinuous functions.

His papers belong to first papers in Slovakia devoted to quantum logic – a field of research which has been intensively developing also because of potential applications in physics and statistics. The development of this field of research in Slovakia is given in Section 3.

Further interesting results of Tibor Neubrunn deal with generalizations of Jegorov theorem. These generalizations are given in several directions and are related to the notion of quasicontinuity. Many papers of professor Tibor Neubrunn originated in problems solved together with other members of the seminar on real functions. A group of these results published together with T. Šalát concerns distance and ratio sets. These and other selected results are summarized in Section 4. A full list of publications con-

sisting of more than 60 original scientific papers, 4 monographs, textbooks and other papers is given in Section 5. The last section of the book contains photographs illustrating the life of Tibor Neubrunn.