František Neuman

85 years of Academician Otakar Borůvka

85 YEARS OF ACADEMICIAN OTAKAR BORŮVKA

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On May 10, 1984, Otakar Borůvka, Nestor of Czechoslovak mathematicians, member of the Czechoslovak Academy of Sciences, has reached eightyfive years of age.

Having completed his studies at the University of Brno, O. Borůvka became Lecturer (1921), Reader (1928) and Professor (1934) at the same University. He studied in Paris, at the Sorbonne, with Prof. Élie Cartan, and in Hamburg with Prof. W. Blaschke. In 1953 he was elected corresponding member and in 1965 ordinary member (Academician) of the Czechoslovak Academy of Sciences.

The scientific work of Professor Borůvka has covered extensive fields of mathematics.

Borůvka's results in classical analysis belong mainly to the period 1923–1925. In his paper *On a certain minimal problem* from 1926 he was a pioneer in transport problems, at least ten years before the study of this kind of problems started in the framework of the then developing graph theory.

In his monumetal work on projective differential geometry O. Borůvka was the first who studied analytic correspondences netween two projective planes. His extensive paper from 1933 on spherical (two dimensional) surfaces in $2n$-dimensional spaces with constant curvatures [17], [23] finds important applications in the modern differential geometry, and the research school in Bologna has been continuing Borůvka's original study in many respects.

O. Borůvka was also one of the founders of some important conceptions of general algebra. He established the theory of grupoids and collected his original results in the book *Foundation of the Theory of Groupoids and Groups*, published in German (1960), English (1974), and several times in Czech.

The essential part of Borůvka's work deals with differential equations. He developed on original and fruitful theory, namely, of that global transformations of linear differential equations of the second order. He introduced original notions and methods, completely solved many open problems in the field, for example, the problem of global equivalence of linear differential equations of the second order. This qualitative theory of global character, which exhibits a high degree of geometrization and algebraization and extensive applications is compiled in his book *Lineare Differen-*

tialtransformationen 2. *Ordnung*, published in German (Berlin 1967) and in English (London 1971).

Academician O. Borůvka is still working at the Mathematical Institute of Czechoslovak Academy of Sciences, branch Brno. In the last years he has extended and intensified his theory of transformations in order to characterize one or more-parametric groups of dispersions of the second order linear differential equations. These groups serve as a main tool of global investigation of problems in connection with the Lie theory that have been considered only locally. He regularly presents his latest results at his Seminar on differential equation.

The importance of Borůvka's achievements has had wide response in a number of honours awarded to him in Czechoslovakia and abroad, and in numerous invitations to foreign universities to give lectures on his results.

Professor Otakar Borůvka is an outstanding individuality not only in the history of Czechoslovak mathematics, where he has the first-class merit for the reputable position of Czechoslovak mathematics in the world, but also in the present mathematical community, thanks to his unceasing enthusiasm, love of work, originality of ideas and inexhaustible scientific programme.

On behalf of all Czechoslovak mathematicians we wish him favourable conditions, vitality, health and happiness for many years coming.

SCIENTIFIC PUBLICATIONS THAT APPEARED DURING THE LAST FIVE YEARS*)

[81] Sur une classe des groupes continus à un paramètre formés des fonctions réelles d'une variable. Ann. Polon. Math., *XLII* (1982), 27–37.
[82] Sur les transformations simultanées de deux équations différentielles linéaires du deuxième ordre dans ellesmêmes, Applicable Analysis (to appear).
[83] Sur les sous-groupes planaires des groupes des dispersions des équations différentielles linéaires du deuxième ordre. Proceedings A of the Royal Society of Edinburgh (to appear).

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*) For the scientific publications [1]–[80] see Časopis Pěst. Mat. *84* (1959), 248–250, *94* (1969), 244–247, and *104* (1979), 219–220. For other publications [1]–[44] of O. Borůvka see ibid.