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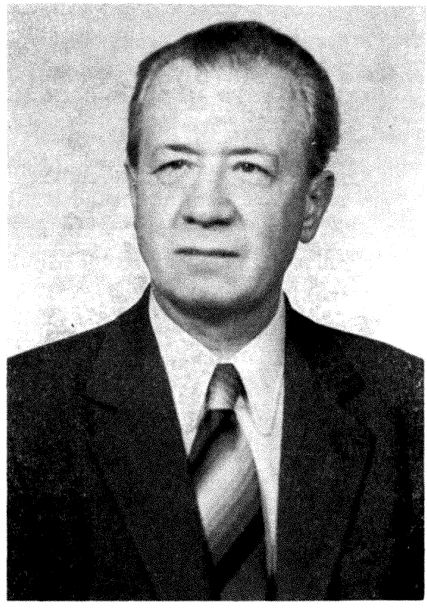
PROFESSOR VÁCLAV MEDEK SEXAGENARIAN

ZBYNĚK NÁDENÍK, Praha, and JOZEF ZÁMOŽÍK, Bratislava

On October 23, Professor RNDr. Václav Medek has celebrated the sixtieth anniversary of his birthday. He was born in 1923 in the town of Žilina, studied the University at Bratislava and obtained the doctor's degree (RNDr.) in 1948. He has been affiliated with the Slovak Technical University at Bratislava continuously for forty years: first as demonstrator, then Assistent Professor, Associated Professor since 1956 and Full Professor at the Department of Mathematics and Descriptive Geometry of the Faculty of Civil Engineering since 1965.



It is not easy to remember on this occasion all the essential moments of Professor Medek's extraordinarily versatile and dedicated activities – teacher, head of Department, researcher, outstanding organizer and officer of the Society of Czechoslovak Mathematicians and Physicists (among other, he was eight years its Vice-President

and President of the Society of Slovak Mathematicians and Physicists). He has been well-known to the general public for his many popularizing lectures, from the press, radio and TV. He has played important part in the codification of Slovak mathematical terminology. He is author of a number of fundamental secondary-school textbook and University lecture notes, in which he has manifested his incessant interest in the modernization of methods of mathematical education. It would be almost hopeless to try name all the committees and boards of which he has been an active and painstakingly working member.

Professor Medek has contributed considerably to the development of mathematical sciences in Slovakia since the end of World War II. His interest in geometry developed on the basis of classical projective geometry. His results in this field concern the projective geometry of finite planes. Recently he has devoted much effort to the problems of computer geometry and computer graphics, and his work is highly appreciated not only from the theoretical point of view but also for its immediate practicability.

Medek's first papers [1]–[3] from the years 1950–51 demonstrated his remarkable ability to find new problems and approaches even in "closed" topics. These and further works stimulated the research of V. T. Šejn. The paper [1] presents a geometrical construction of a plane cubic containing the singular points of quadrics which form a net. In [3] the author classifies the properties of a nonlinear system of quadrics by means of their mapping onto the points of the linear space S_5.

Of particular significance is his paper [4] from 1954 on one of the fundamental concepts of descriptive geometry, namely, on the contour of convex surfaces. In terms of the projection cone and its boundary Medek gives the definition of real and apparent contours of a convex surface in central projection; thus he sets right the lapses of the descriptive geometry, and continues to study the contour of the summation surface. Naturally, thirty years ago the problem was not understood in the framework of the computer graphics; this approach has appeared only later. Medek resumed this direction of research in [16] and [18], where, for plane convex polygons, he established theorems that enabled him to suggest a method of construction of contours of convex surfaces, which is suitable for automatic processing. The paper [20] has even wider aspects – it not only gives a construction that uses projections of two figures to obtain the projection of their union and intersection, but also contains a formula for the visible part of the intersection, which has important applications in technical problems, allowing to find algorithms for constructions of visible parts even of more complicated figures.

A recent paper from the computer graphics, [21], has already found response abroad. Here the boundary of a finite point set M in the plane is studied by using the notions of the weight of a point in the set M, density of M and a certain analog of connectedness. The paper also includes an algorithm for various approximations of the boundary, one of them being the convex hull of M. The results can be also applied to pattern recognition problems.

A series of papers in which Medek resumed the research in descriptive geometry

includes among other [7], [14], [19]; extensive study of parallel projection and orthogonality in [14] leads to new generalization of the methods of descriptive geometry.

Extensive and deep knowledge of geometrical problems helped V. Medek in solving problems, the origins of which go back to papers by Lenz, Artin and Pickerton. This is demonstated in a series of papers [5], [6], [8]–[10] from the period of 1956–61. The papers concern mappings of line projectivites to points of the three-dimensional projective space, mappings of plane collineations onto the projective space of dimension 8, Rozefeld's interpretation of the complex projective space of dimension n by means of lines of the real projective space of dimensin $2n - 1$, for $n = 2$ (A. P. Norden dealt with the problem for $n = 1$ in 1949), bundles of line projectivities and its decompositions into systems of involutions.

From the classical projective geometry V. Medek passed to a study of Desarguesian plane and finite ovals in [12], [15], [17]; the main result of the last paper is the assertion that, if the quasipolar of each point not lying on the oval is a line, then the plane is Papp's plane and the oval is a conic section.

Medek's textbook of constructive geometry represents a very important milestone in Czechoslovak literature on descriptive geometry. It excited general interest and will soon appear in German translation.

Professor Medek was also the main author of a unique work, two-volume English-German-French-Russian-Slovak Mathematical Dictionary that appeared in 1982 in coedition of the publishing houses Alfa in Bratislava and Technik in Berlin.

The colleagues and friends of Professor V. Medek have known him as a man assiduous in his work and accurate in fulfilling his duties, but also as a friendly and sociable man of constant good humour who readily offers advice and help to anybody in need.

Czechoslovak mathematical community wishes Professor Václav Medek many years of firm health, personal satisfaction and fruitful scientific activity.

LIST OF PUBLICATION OF PROFESSOR VÁCLAV MEDEK

[1] Synthetical construction of Hesse's cubic of a net of conic sections (Slovak). Čas. pěst. mat. a fys. *75* (1950), 358–361.

[2] Mapping of osculating and hyperosculating conic sections of a right conic section (Slovak). Techn. sborn. (1950), 94–95.

[3] Mapping of some nonlinear systems of conic sections (Slovak). Mat.-fyz. sborník SAVU (1951), 59–67.

[4] On the contour of convex surfaces. Mat.-fyz. čas. *4* (1954), 38–42.

[5] Linear systems of projective mappings on the line (Slovak). Mat.-fyz. čas. *6* (1956), 98–108.

[6] Some linear systems of singular collineations (Slovak). Mat.-fyz. čas. *7* (1957), 83–93.

[7] Cyclographic mapping in the plane (Slovak). Mat.-fyz. čas. *8* (1958), 73–80.

[8] On a certain mapping of the complex projective plane (Slovak). Mat.-fyz. čas. *9* (1959), 211–221.

[9] Об разложении пучков проективных преобразований на прямой. Mat.-fyz. čas. *11* (1961), 99–112.

[10] Об разложении сетей проективных преобразований. Mat.-fyz. čas. *11* (1961), 229—237.
[11] On bundles and nets of projective mappings on the line (Slovak). Sborn. elektrotechn. fak. SVŠT (1964), 265—268.
[12] On an interpretation of affine geometry over the field of residual classes mod p (Slovak). Mat.-fyz. čas. *16* (1966), 41—44.
[13] The correspondence between products of projective mappings on a line in various order (Slovak). Sborn. stav. fak. SVŠT (1966), 7—17 (with *J. Horniaček*).
[14] Darstellende Geometrie eines Raumes mit Orthogonalgeometrie. Mat. čas. *19* (1969), 216—224.
[15] Eine Bemerkung über endliche Ovale ungerader Ordnung. Mat. čas. *22* (1972), 319—322.
[16] Über den Umriss der konvexen Flächen. Apl. mat. *23* (1978), 378—380.
[17] Über eine Eigenschaft von Ovalen. Čas. pěst. mat. *103* (1978), 297—302.
[18] Über den Umriss der konvexen Flächen. Vorträge z. Geom. *28* (1978), 73—76 (with *J. Zámožík*).
[19] On intersection of half-planes and half-spaces (Slovak). Math. obz. *14* (1978), 61—68.
[20] Einige Bemerkungen zur darstellenden Geometrie eines Raumes über einen angeordneten Körper. Acta math. Univ. Com. *39* (1980), 25—29.
[21] On the boundary of a finite set of points in the plane. Comp. Gr. Im. Proc. *15* (1981), 93—99.
[22] Boundary of the union of rectangles in the plane. Apl. mat. *28* (1983), 161—172.