Vincent G. Potter

We have been informed by the Peirce Edition Project that Vincent G. Potter, died on 3 May 1994. A funeral mass was celebrated for him on 6 May at Fordham University. He was Ignatius Loyola Professor of Philosophy at Fordham University and had only recently been appointed Executive Consultant for the Peirce Edition Project.

Philosophers will have known Potter for his writings on Peirce's concept of logic as a normative science, including his papers "Peirce's analysis of normative science" (Transactions of the Charles S. Peirce Society **2** (1966), 5–32) and "Normative science and the pragmatic maxim" (Journal of the History of Philosophy **5** (1967)) and his book *Peirce on Norms and Ideals* (Amherst, University of Massachusetts Press, 1967). Historians of logic and mathematics will have known of him through such work as his joint paper with his former student Paul B. Shields on "Peirce's definitions of continuity" (Transactions of the Charles S. Peirce Society **13** (1977), 20–34). It was under Potter's direction that Shields wrote his doctoral thesis on *Charles S. Peirce on the Logic of Number* (Fordham University, 1981).

## The Editor

# In Memoriam
# Fyodor Andreevich Medvedev
# (1923 – 1993)

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Fyodor A. Medvedev, one of the leading Russian historians of mathematics, died on February 5, 1993. During three decades, he contributed extensively and significantly to the history of set theory and of the theory of real functions, logical foundations of modern mathematics, and to the history of non-standard analysis. His last years, among his most productive, exhibited his mature concern with methodological problems, especially with those of the infinite in mathematics. I believe that he was in the midst of reconsidering his earlier experiences in tackling the problems of the history of mathematics in the light of a rather general conception that he had developed, and he was full of vigor and plans when his premature death ended his work.

Medvedev was born on February 18, 1923 in a rural district near the town of Kozelsk, known in Russian history for the heroic resistance of its inhabitants to the Mongol invaders in the fourteenth century. After graduating from the Kluga High Pedagogical School in 1952, he began his career as a mathematics teacher in a village school. It should be mentioned that the delay in his graduate studies was caused by tuberculosis of the knee joint from which he suffered from childhood, and which was only the first of the obstacles in his life he was to overcome. In the summer of 1955, when the program of post-graduate studies was launched at Moscow's Institute for the History of Science and Technology, he became a student of A.P. Yushkevich, who motivated him to undertake research concerning the history of set theory in Russia. I estimate that at the inception of his work, his studies would not not have been easy for him: graduated from a provincial high school, he enjoyed no advance knowledge in the abstract fields of mathematics; nor had he mastered foreigh languages. But he was a slogger.... In eight years, when his Ph.D. dissertation had been attained, he was able not only to understand the at times cryptic and sophisticated mathematical contents of the works of the founders of mathematics, written in German, English, French, and Italian, but to supply his own original point of view on the ulterior motives underlying the development of set theory and related fields.

This has been fully made manifest in Medvedev's first book, *The Development of Set Theory in the Nineteenth Century*, published in 1965. Contrary to the common opinion that set theory originated only as an outcome of Cantor's concerns with trigonometric series, he convincingly made the case for its geometric and algebraic roots, accentuating the role of Dedekind in the development of set-theoretical concepts. But it is not enough merely to praise the positive achievements of his book; its methods are to be emphasized as well. In considering a large range of subjects — his book was intended to provide a real encyclopedia of those branches of mathematics that have contributed to the emergence of set theory — he skillfully avoided the oversimplifications that often accompany the work of some "scissors and glue" writers by setting up in advance a small number of key problems and treating them with so high a degree of precision and penetration that the results obtained seem to never demand any essential revision or retraction.

In 1974 Medvedev published his second monograph, *The Development of the Concept of the Integral*, in which a very impressive set of problems pertaining to measurement and measure, conceived as mathematical notions, was embraced from the very origins of integration in Antiquity up to the development of the modern achievements within functional analysis. Through Archimedes and Pappus, Kepler and Cavalieri, Newton and Leibniz, he has traced the paths of the development of the idea of summation by means of integral sums which had first been realized in the forms of Cauchy's and Riemann's, and the Lebesgue's and Stiltjes' integrals. As one example of his valuable suggestions, it is worth mentioning his pioneering insight of reconstructing the notion of the function of sets as distinct from that of points, owing to the prehistory of Lebesgue's integral within Cauchy's and Peano's works.

A year later, in 1975 Medvedev published another masterpiece — *Scenes from the History of Real Functions* (this is the title of its English translation published by Birkhäuser in 1991). Fully cognizant of the difficulty in presenting a comprehensive overview of a domain which, during the last two centuries has essentially shaped the main body of modern mathematics, he focussed on relations between real function theory and other mathematical disciplines as well as on the historical development of the notion of function — from antiquity, through the seventeenth century, Euler, Dirichlet, and Dedekind, and up, to the logico-mathematical conception of function originating in Frege's works. Then he analyzed the different types of convergence and the relation between integration and differentiation — a

topic dropped from his previous book. In 1976 Medvedev considerably advanced his studies on the theory of real functions by publishing *The French School of Function Theory and Set Theory at the Turn of the Century*, which complements his *Scenes from the History of Real Functions* and stressed the continuity in the development of the subject from the eighteenth century up to the twenties of the twentieth century. Besides giving an irreproachable logical analysis of the difficult issues in real function theory in the works of Borel, Baire, and Lebesgue,an interesting chapter is included on what is now called the "social history of mathematics", in which is discussed the interplay between the organization of educational curricula in mathematics within the École Polytechnique and the École Normale and the level of results obtained in pure mathematics by their professors.

In the 'eighties a shift of interest may be traced in Medvedev's works: namely, more of his attention is drawn to the minute logical analysis of presuppositions — for the most part implicit — resting at the bottom of modern theoretical mathematics. Out of meditations on this problem his *Early History of the Axiom of Choice* issued in 1982, concurrent with publications on the same theme by G.H. Moore (1982) and J. Cassinet and M. Guillemot (1983). Next came the turn of Cantor's works on set theory. Aware of the considerable demand for Russian translations of Cantor's writings, he undertook the preparation of such an edition, which he himself enlarged with rich and suggestive commentaries. The experience of mastering the ideas of the German mathematician provoked Medvedev to be suspicious towards some remarks *en vogue* about the influence which Cantor's theological sympathies played in his positive advances in set theory. In a series dedicated to this issue, he vehemently opposed this point of view, arguing in favor of the purely mathematical roots of this discipline.

Medvedev's last years were characterized by his interest in the history of non-standard analysis, and more generally in the problem of the infinite in mathematics.. His attitude to the latter subject was tinctured by his own original opinion that the finite always presupposes its opposite, the infinite, and that, consequently, both concepts are not only logically inseparable, but that in the background of all considerations in the real history of mathematics referring to the hsitory of the finite only, one should look for an implicit use of the infinite. From this position he attacked the common point of view that the actually infinite has entered mathematics only in the modern epoch, when the "closed world" of antiquity collapsed.

Since 1989, Medvedev was an Associate editor of the periodical *Historia Mathematica*, and thus, along with his participation in international meetings, contributed much to the promotion of studies in the history of mathematics not only in Russia — where he unquestionably was one of its primary leaders, but within the world scientific community as well. Many scholars benefitted much from his suggestions and ever-kindly criticism, and many young people will always appreciate the encouragement and support he had been generously giving to their first endeavours to master attractive and difficult issues in the history of mathematics.