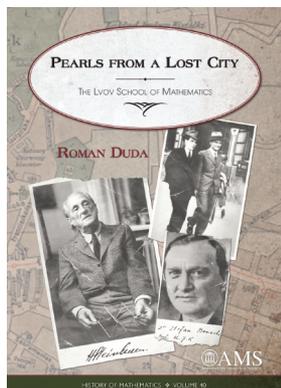


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Pearls from a Lost City
The Lvov School of Mathematics
by Roman Duda,
translated by Daniel Davies

Many readers may not be familiar with Lvov, once an important city in Poland, and perhaps fewer know that it was once the center of an important school of mathematics. Roman Duda's book, *Pearls from a Lost City*, published in the AMS *History of Mathematics* series, describes the

rise and flourishing of the Lvov School of Mathematics during the two-decade interlude between the 150-year-long occupation by the Austrian Empire that ended after World War I and the invasions by the Soviet Union and Germany at the beginning of World War II. The story of how leaders like Puzyna, Sierpiński, Steinhaus, and Banach were able to draw immense talent to the school during the interbellum years and create an enormously productive environment for research and learning comes alive in Duda's book and makes for a gripping read.

What was the secret behind the rapid growth of the Lvov School seemingly out of nowhere in the 1920s and 30s and how do the school's achievements still influence mathematics today? Duda describes three important characteristics of the School. The first is the groundbreaking work of the founding members, which formalized and drove forward the mathematical revolution that followed Cantor's controversial new discoveries in set theory and played an important role in building the foundations for Bourbaki and other mathematical movements in the latter half of the 20th century. The second is the convivial and productive social culture established by the school's leaders—in addition to long seminars, there were regular gatherings centered around Banach at Lvov's Scottish Café where mathematical conversations were recorded in what became known as the *Scottish Book*. The third is the importance that the members of the Lvov school placed on pedagogy. In

addition to research, members of the Lvov School put their energy and time into popularizing mathematics (while also supplementing their income) teaching at the middle and high school levels and writing dozens of textbooks.

Essential to the success of the Lvov School was the leadership and vision of J. Puzyna, Chair of Mathematics at Lvov University from 1892 until his death in 1919. Disappointed by the dull state of mathematics at Lvov when he arrived back from his studies and research abroad, Puzyna took action by inviting W. Sierpiński to the school in 1908, and together they strategically built a research program that centered around a single topic that touched on other important fields. To this end Sierpiński ran a regular seminar devoted to set theory and its applications in topology and analysis and attracted many students and researchers to Lvov including O. Nikodym and Z. Janiszewski.

After World War I, Puzyna recruited H. Steinhaus who in turn recognized the talent and potential of S. Banach. Steinhaus and Banach established the journal *Studia Mathematica*, publishing nine volumes between 1929–1940. Under their leadership, the Lvov School became known internationally for its ground-breaking work in the field of functional analysis, for its elegant axiomatic frameworks, existence proofs, and probabilistic constructions, and for developing the fields of measure theory, operator theory, probability theory, and the beginnings of game theory. B. Ulam and K. Kuratowski were among the many mathematicians who gathered in Lvov during this “golden age.”

While the active days of the Lvov School were short-lived, brought to an end by the German occupation, the accomplishments of its members still have substantial influence and resonance today. The legacy of the Lvov School rests not only on its members' important contributions to mathematics and to mathematical thinking, but also the vision of its leaders and the vibrant mathematical culture that they were able to establish. Taken as a whole, Duda's book describes an enviable mathematical environment that has wisdom to offer for mathematics departments and institutes of any era and in any nation.

The AMS Bookshelf is prepared bimonthly by AMS Book Acquisitions Consultant Eriko Hironaka. Her email address is ehironaka@amsbooks.org.