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(*b*. Warsaw, Poland, 12 June 1888; *d* Lvov, Poland (now U.S.S.R.), 3 January 1920)

mathematics.

Janiszewski founded, with Stefan Mazurkiewicz and Waclaw Sierpinski, the contemporary Polish school of mathematics and its well-known organ *Fundamenta mathematicae*, devoted to set theory and allied fields (topology, foundations of mathematics, and other areas).

Janiszewski's father Czeslaw, a licentiate of the University of Warsaw and a financier by profession, was director of the Societe du Credit Municipal in Warsaw; his mother was Julia Szulc-Chojnicka. He colleagues, including Stefan Straszewicz, he organized a group of Polish students. He continued his secondary education in his native city in 1907 and immediately began studying mathematics at Zurich. There, along with several of his colleagues, including Stefan Straszewicz, he organized a group of Polish Students . He continued his studies in Munich, Göttingen, and Paris. Among his professors were the mathematicians Burkhardt, H. K. Brunn, Hilbert, H. Minkowski, Zermelo, Goursat, Hadamard, Lebesgue, Picard, and Poincarë, and the philosophers Foerster, Bergson, and Durkheim.

Janiszewski received a doctorate from the Sorbonne in 1911 for his thesis on a topic proposed by Lebesgue. The bold notions that he introduced in it and the results it contained became an important part of set theory (see, for example, F. Hausdorff, *Mengenlehre*, 2nd ed. (Berlin-Leipzig, 1927]). Beginning in the same year he taught mathematics at the Sociëtë des Cours des Sciences, which had replaced the Polish university in Warsaw, banned by the czarist regime. In 1913 he obtained the *agrégation* in mathematics from the University of Lvov, where until World War I he lectured on the theory of analytic functions and functional calculus.

At the outbreak of the war Janiszewski enlisted in the legion fighting for Polish independence. A soldier in the artillery, he participated in the costly winter campaing (1914-1915) in the Carpathians. A year later, refusing with a substantial part of the legion to swear allegiance to the Central Powers, he took refuge under the pseudonym of Zygmunt Wicherkiewicz at Boiska, near Zwoleń, and at Ewin, near Wloszczowa. At Ewin he directed a refuge for homeless children, which he founded and supported. In 1918, when the University of Warsaw, which had again become Polish, offered him a chair in mathematics, he began to engage in notable scientific, teaching, and editorial activities. But these were suddenly cut short by his death two years later at Lvov, following a brief illness.

For Janiszewski teaching was a mission and the student a comrade, and his attitude was shared by the other mathematicians of the Polish school. In order to better prepare his courses, he took up residence in a small isolated house in Klarysew, near Warsaw. By applying mathematical logic, he wished methodically to unmask the defects and confusions in the structure of fundamental mathematical concepts. His first research works (1910-1912) dealt with the concepts of arc, curve, and surface, which had not yet been defined precisely. In 1912, in a communication to the International Congress of Mathematicians in Cambridge, England, he sketched the first construction of a curve without arcs (that is, without homeomorphic images of the segment of a straight line).

Three topological theorems are especially associated with his name:

1. If a continuum C has points in common with a set E and with the complement of this set, then each component of the set $C \cdot \bar{E}$ (where ā designates closure) has points in common with the boundary $Fr(E)$.

2. If a continuum is irreducible between two points and does not contain subcontinua which are nondense on it, then it is an arc. This intrinsic topological characterization of the notion of arc is due to Janiszewski.

3. In order that the sum of two continua, neither of which is a cut of the plane which contains them, be a cut of this plane, it is necessary and sufficient that their common part is not connected (that is, that it has more than one component). This theorem abridged and simplified considerably the demonstration of the Jordan curve theorem. Moreover, it constitutes the most essential part of the topological characterization of the plane—a success all the more remarkable because the problem of a topological characterization of Euclidean spaces of more than two dimensions still remains unsolved.

When Poland became independent in 1918, the Committee of the Mianowski Foundation in Warsaw, an important social institution patronizing scientific research, invited Polish scientists to give their views on the needs of the various disciplines in Poland. In his article in *Nauka polska*, the organization's yearbook, Janiszewski advocated the concentration of mathematical research in a special institution (now the Institute of Mathematics of the Polish Academy of Sciences) and the foundation of a periodical devoted solely to a single branch of mathematics having in Poland sufficiently numerous and capable practitioners; the latter criterion would assure its value and worldwide importance and, at the same time, create a favorable mathematical climate for youth. Such was the origin of *Fundamenta mathematicae*.

Through a series of articles on philosophy and the various branches of mathematics in volume I of *Poradnik dla samouków* ("Adviser for Autodidacts"), of which he was the principal author, Janiszewski exerted an enormous influence on the development of mathematics in Poland. He was aware of social problems. As a student in Paris he had been strongly influenced by Marc Sangnier, founder of the "Sillon" group, a Christian-democrat movement, and author of *Vie profonde*. Thus when chevrons were initiated in the Polish Legion, Janiszewski refused to accept this distinction for himself, contending that it introduced inequality. He donated for public education all the money he received for scientific prizes and an inheritance from his father. Before he died he willed his possessions for social works, his body for medical research, and his cranium for craniological study, desiring even to be "useful after his death."

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