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THE AXIOM OF CHOICE AND THE ROAD PAVED BY SIERPIŃSKI

The acceptance of the Axiom of Choice (AC) was “a turning point for mathematics (. . .) symptomatic of a conceptual shift” (Kanamori 2012, 14). Whilst Western Europe remained hostile to this new vision of mathematics, it was in Eastern Europe that the seeds of this conceptual shift landed and yielded a cultivar that was to supplant and overtake the Western world. The situation changed in 1916 when Sierpiński, published a series of articles on AC and revived the debate – albeit on completely different grounds. Eschewing theoretical concerns about the nature and methodology of mathematical practice, he paid little attention to the question as to whether AC could be accepted as a mathematical construction. Instead, he recentred the discussion around practical matters (viz., its consequences, its interrelations and degree of necessity within various proofs, as well as its role in various mathematical theorems). Originally adopting an objective stance vis-à-vis AC, his programme was to eventually completely supplant all previous philosophical and methodological debates: “(s)ince the labours of Mr. Sierpiński and of the Polish School, a revolution has been produced. A certain number of mathematicians have fruitfully used the axiom of choice; things are no longer in the same place” (Lebesgue 1941, 109).