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Hajnal, András
Paul Erdős' set theory. (In English)
Graham, Ronald L. (ed.) et al., The mathematics of Paul Erdős. Vol. II. Berlin: Springer. Algorithms Comb. 14, 352-393 (1997). [ISBN 3-540-61031- 6/hbk]

The author was a 25-year old graduate student in Hungary when he was introduced to the 43-year old Erdős in 1956. By the end of the day of their first meeting they had begun their first joint paper. This account confirms in some detail the way in which Erdős worked with a collaborator. The author's main purpose, however, is to give some of the highlights of their results that were produced in over fifty joint papers published from that time to 1993. This represents about half of Erdős' total number of set theory papers, a bibliography of which is appended. Much more than just the results are described; the motivating contexts, parallel work by others, the latest outcomes, remaining challenges, and even interesting errors that were made are included in this history. The well-organized sub-topics include: large cardinals (with A. Tarski), partition calculus (Erdős-Rado theorem), Erdős cardinals, canonization, square bracket relations, Jónsson algebras, property B (concerning families of sets), chromatic number, decomposition of graphs, and set mapping problems. Running through these topics are certain common themes involving the use of the General Continuum Hypothesis (which Erdős welcomed using), and the Ramsey theorem. The author credits Erdős with the creation of combinatorial set theory and indicates how it has proven useful in set theoretic topology. Some of Erdős most frequent collaborators in set theory, in addition to the author, are: R. Rado, G. Fodor, E. C. Milner, S. Shelah, F. Galvin, and A. Máté. This paper, thorough as it is, makes a reader wish to know even more about the work and methods of Erdős.

A.C.Lewis (Hamilton)

Classification:
01A60 Mathematics in the 20th century

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property B; large cardinals; partition calculus; Erdős cardinals; canonization; square bracket relations; Jónsson algebras; chromatic number; decomposition of graphs; set mapping problems