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GEORGE SZEKERES COUNTS TO NINETY

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A conference was held recently at the University of New South Wales to celebrate the ninetieth birthday of well-known local mathematician George Szekeres (pronounced roughly 'sack-er-ash'). The conference focussed on combinatorics and number theory. These have always been his favourite areas of research. Eminent mathematicians from around the world were invited to speak about recent developments, and about the problems in each area that George contributed to. The speakers included George's colleagues and students and each speaker also shared warm recollections of their experiences, and of their knowledge of him as a person.

George Szekeres was born in Budapest, Hungary, in 1911, and his gifts in science and mathematics were soon apparent. An important influence during his high school career was the journal 'Középiskolai Matematikai és Fizikai Lapok', which provided mathematical problems and enrichment. (George was much later instrumental in establishing a similar high school mathematics journal, 'Parabola', in Australia.) George studied chemical engineering at the Technological University of Budapest, to contribute to the family's leather business. During his time at university, he often met with a small group of enthusiastic students, drawn from the ranks of the 'Lapok' problem-solvers, to pose mathematical problems and discuss solutions. The group was simmering with talent, including Paul Erdős, Paul Turán and Esther Klein, all outstanding mathematicians of this century. In 1937, Esther, who has twice lectured on geometry at NMSS, was married to George.

Towards the end of the 1930s, life was becoming increasingly difficult for Jews in

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Hungary. George and Esther eventually found it necessary to leave, and moved to Shanghai, where their son Peter was born in 1940. George worked as a leather chemist there, and later as a clerk in an American air force base. In 1948 George accepted an offer of a lectureship at the University of Adelaide. He remained there for fifteen years, during which time their daughter Judith was born in 1954. In 1963, the family moved to Sydney (except for Peter who was studying physics in London), where George had accepted a position at the University of New South Wales as the Chair of Pure Mathematics - on the condition that he would not have to be an administrator! In 1963, he was elected to the Australian Academy of Science, and awarded the Academy's Lyle Medal in 1968. George retired in 1976, but as Emeritus Professor, his friendly face can still be found in his office in the mathematics department at UNSW several days a week.

In Sydney, George has also been a valued member of the amateur classical musical scene, playing violin and viola in the North Sydney Symphony Orchestra and the Kuring-gai Philharmonic Orchestra.

George's mathematical output has continued through most of his adult life, beginning in his undergraduate days, and sustained until the present. His interests are incredibly diverse, but there are several recurring themes. One prominent topic is combinatorics, and there is at least one combinatorial problem which has been running through George's whole life. It was first posed by Esther in the early 1930s, and was the subject of a collaborative paper with Paul Erdős ('A combinatorial problem in geometry', 1935). Erdős referred to this problem as the 'Happy Ending Problem', because it had a happy ending - namely George and Esther's marriage.² The problem has yet to be fully solved, and George is currently working on a computer search that will test a particular special case. Besides combinatorial geometry, he has made contributions in the theory of partitions, graph theory, and other areas of combinatorics. Another prominent topic in his career is general relativity; George is perhaps best known for his role in developing the mathematical theory underlying the study of black holes. He embraced the computer age with enthusiasm, making early contributions to techniques of numerical analysis, especially in the theory of computing high dimensional integrals. More recently, his research interests include combinatorial geometry, Hadamard determinants and chaos theory.

I first met George Szekeres about two years ago, when a lecturer at UNSW suggested that he might be able to help me with a problem about random walks. He was indeed very helpful; he showed me a general method of attacking such problems, and provided much additional information. There were several things I learnt about George from that first encounter. He enjoys discussing and working on mathematics with people, no matter what their level of mathematical development or formal attainment. The techniques he used to solve the problem displayed a fantastic depth of mathematical experience, which only such a long and dedicated career can bring. Most importantly, George and Esther provide living proof that old age is certainly no

²See the next article

barrier for a sparkling, active intellect. It is this last aspect of George's life that inspires admiration and optimism in everybody who knows him.