

DICK DE BRUIJN MEMORIAL ISSUE

This volume commemorates Nicolaas Govert ('Dick') de Bruijn, a Dutch mathematician who passed away on February 17, 2012 at the age of 93. De Bruijn was a very versatile mathematician. In his long research career he worked on number theory, analysis, asymptotics, combinatorics, quasi-crystals, Penrose patterns and computer verification of proofs (his project Automath).

Partly due to the difficult (pre-) World War II situation in the Netherlands, Dick was forced to learn a lot of mathematics through self-study. The independence and self-reliance he so acquired would remain with him for the rest of his career, and his style is marked by independence, originality, curiosity and playfulness. This playfulness is also seen in De Bruijn's being an amateur magician. De Bruijn himself stressed that he was not a builder of theories, but would rather follow his nose and seize the opportunities he thus found. Instead of reading a proof by somebody else, he typically would first try to find a proof himself.

He was one of the first pure mathematicians in the Netherlands to realize that there would be an increasing need in society for industrial mathematics, and this was one of the reasons which led him to move from the University of Amsterdam to the Technical University of Eindhoven which was experiencing a period of growth at the time. He made great contributions to the development of the mathematical curriculum there, and was the mentor for about ten Ph.D. students.

His work in number theory was largely focused on estimating the number of integers composed of only small prime factors and of determining the asymptotic behavior of number-theoretic functions satisfying a differential-delay equation (such as the Dickman-de Bruijn function). He reached a much greater understanding in these areas than his predecessors, and it would take until the work of people such as Hildebrand and Tenenbaum in the 1980's before much more would be learned. Through certain problems in combinatorics, de Bruijn was led to number theory. He kept his interest in combinatorics throughout his career and made important contributions, for example to the study of complementarity and generalizations of Plya's enumeration theorem.

Many concepts carry his name, e.g., "De Bruijn graph," "De Bruijn sequence," "De Bruijn-Newman constant," and "De Bruijn indices." His name thus lives on, and this volume can be seen as a small token of our gratitude for his mathematical contributions, many of which have a certain magical quality.