

# Marja Simonsuuri-Sorsa

\* 28.8.1939 † 22.10.2018



**RESEARCH PROFESSOR** Marja Simonsuuri-Sorsa passed away in the Jorvi Hospital in Espoo after a protracted illness. She was born in Helsinki as the eldest daughter of the Finnish folklore scholar Lauri Simonsuuri and his wife Aili Simonsuuri, a secondary school teacher, and matriculated from the Normal Lyceum for Girls in 1958. She then began her studies in biology at the University of Helsinki with genetics as her main subject. Following her marriage in 1961 to Professor Veikko Sorsa she assumed the surname Simonsuuri-Sorsa but used plain Sorsa in scientific contexts.

Marja Simonsuuri-Sorsa's earliest published papers were concerned with the light microscopy of plant chromosomes, and when Marja and Veikko Sorsa spent a year at the University of California in Berkeley as ASLA Fulbright scholars in 1963–64 they were started investigating the use of electron microscopy for the study of chromosomes, resulting in a method that enabled even the smallest details to be detected. When visiting the Max Planck Institute in Tübingen, Germany, in 1968 Marja Sorsa was able to demonstrate to its director, Wolfgang Beermann, an authority on the structure of chromosomes, the value of this new method for chromo-

some mapping. The following year she defended her doctoral thesis on *The Ultrastructure of the polytene chromosome in Drosophila melanogaster with special reference to electron microscopic mapping of chromosome 3R*. *Drosophila* is a classic object of study in genetics, and consequently efforts had been made since the 1930s to study its polytene, or giant chromosomes using electron microscopy but without success. Veikko Sorsa and his students have continued to use the method successfully for refining the fruit fly chromosome mapping originally obtained by light microscopy.

Marja Simonsuuri-Sorsa had taken up university teaching in 1964 and became a docent and lecturer in genetics in 1971. This was roughly the time when environmental pollution became a focus of international interest and concern. Since then, it has gained in importance on account of its implications for human health, since virtually the same factors give rise to both cancer and genetic mutations. This led her to move over from the structure of chromosomes to the study of environmental genetics, giving a seminar for the following year on pollution genetics. This topic was seen to be important to society at large

that it aroused considerable interest among students, and a research group was formed in the Department of Genetics under Marja's direction. She then spent the fall term at the University of California, Davis, in 1974–75, this time in the Department of Toxicology. On her return, the research group moved from the university to the Finnish Institute of Occupational Health, and later, in 1978–79 Marja worked as a senior research fellow of the Academy of Finland, before becoming head of the institute's laboratories, head of department from 1989 onwards and eventually an Academy of Finland research professor in 1993. The Gene Mutation Laboratory, for its part, became the Laboratory of Cellular and Molecular Toxicology, forming part of a large working group in systemic toxicology comprising 40–60 members. She was elected to membership of the Finnish Academy of Science and Letters in 1983.

Marja Simonsuuri-Sorsa's new field of research soon began to yield results. Her students set about studying the effects of carcinogenic and mutation-inducing substances such as polystyrene and tobacco smoke on working environments and eventually produced doctoral theses on such topics. Many of these students were from abroad, the more distant ones from Japan and the United States. Eventually she was made a Commander of the Order of the Lion of Finland, while internationally the Collegium Ramazzini granted her an award in 2010 in recognition of her work in promoting the ethical aspects of occupational and environmental health. Her work led to various changes in the legislation protecting employees' health, and it was equally obvious

that her research findings would be contested to the very last by those industries generating pollution or manufacturing carcinogens such as tobacco products.

Marja Simonsuuri-Sorsa took up a position in the Finnish Ministry of Education in 1996 and performed many honorary functions for the EU and for Nordic and other international bodies, especially in her own fields of genome research and the identification of individual risk factors. Altogether she published some 400 scientific papers, while her best-known work as an author of textbooks was her contribution to the working group responsible for a biology textbook for upper secondary schools in Finland published in 1966, which, as a thoroughly modern introduction to the problems of human life and the environment, continues to serve as a model for textbooks and teaching in that field.

Perhaps the most unusual among the many awards that Marja received in her lifetime was the Björn Kurtén Prize for paleontology, awarded to her in 2017. In 1960, while still a student, she had discovered at Suomusjärvi what proved to be the oldest known fossil bone found in Finland, part of the shoulder blade of *Deinotherium*, a proboscidean (related to the elephant), dating back at least five million years, to the Miocene.

Marja Simonsuuri was accustomed to spending the summer with her family at her mother's ancestral home in the maritime landscapes of Haapasaari, off Kotka. Apart from her family, she will also be missed by a wide circle of colleagues and friends, who will remember her as a cheerful, warm-hearted, hospitable person.

*Obituary by Juhani Lokki  
and Anssi Saura*