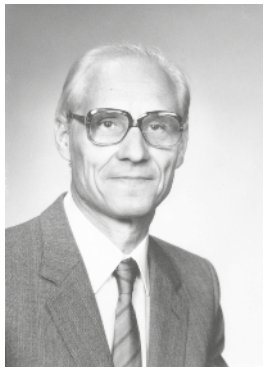
Pentti Kauranen

* 4.2.1931 † 2.4.2021



Pentti Kauranen was born in Riga, the capital of independent Latvia, on 4 February 1931, and died at the age of 91 on 2 April 2021 in Helsinki. Pentti Kauranen was the oldest of five children in his family. His father was a successful businessman whose company at the time sold fabrics from the Pori cotton mill in the Baltic states. His mother belonged to the German language minority in the Baltics. Shortly before the outbreak of the Second World War, the family returned to the father's hometown of Vyborg. During the war, the family had to leave Vyborg twice and could never return, and after an eventful journey through war-torn Finland they finally settled in Tampere.

After graduation from the Tampere Lyceum in 1948, Pentti Kauranen entered the Faculty of Mathematics and Sciences of the University of Helsinki and chose to study chemistry and physics. Kauranen earned his master's degree in 1954 and his PhD in 1962. His dissertation entitled *Alpha branching in the decay of Pb-210 and Bi-210; a new mercury isotope Hg-206* was in the field of radiochemistry.

Kauranen began his career as a lecturer at the Hanko Lyceum 1955–1956. From there, he went on to work as the Chief Chemist at Atomienergia Oy 1957–1960. The company ran what is so far the only uranium mine in Finland in Eno, North Karelia. 1961–1962, Kauranen worked as a researcher for the Atomic Energy Commission. Pentti Kauranen spent the years 1963–1964 in the USA with his family. He had received the highly competitive ASLA Scholarship, which allowed him to focus on his research first at the University of Michigan and later at the University of Arkansas.

Kauranen was a Docent at the University of Helsinki 1964–1973, during which time he held many research and teaching positions at the university. At the same time, Kauranen worked at the Research Council for Natural Sciences of the Academy of Finland, first as the Secretary, later as a member and for several years also as the Chair of the Council.

Pentti Kauranen was one of the first professors at the newly established University of Kuopio. He was appointed Associate Professor in 1972 and Professor in 1973. Kauranen was one of the key figures in the process where the initially small medical school (known in English as the University of Kuopio at the time) developed and grew to become a full-fledged university. Kau-

ranen was Head of the Department of Chemistry. The department's main role was to give basic education for medical and science students, and Kauranen taught basic chemistry courses as well as inorganic, physical and radiochemistry courses. Kauranen was deeply involved in the administration of the university. He served as Vice Rector 1978–1981 and 1984–1990. Within the last period he also served as the acting Rector for a period.

Kauranen's career also led him to national positions. He spent his last working years in the management of the Higher Education Policy Department of the Ministry of Education, retiring in 1993. After retirement, he served a five-year term as Secretary General of the Finnish Academy of Science and Letters. When the Baltic states regained independence in 1991, he played a major role as a volunteer mentor in the re-creation of their universities.

The list of Kauranen's scientific and other positions of trust is long. We mention only the following as examples: member of the Advisory Committee on Scientific Information 1966–1969, member of the Advisory Committee on Radiation Protection 1969–1970, member of the Finnish National Commission for UNESCO 1975–1980 and chair of the development team for student admissions in the field of science 1981–1982. Along with many science policy and administrative tasks in academia and the government, Pentti Kauranen was able to keep up his scientific work.

Kauranen's research career had a remarkable start as he became a co-author in two publications on radionuclides that appeared in the prestigious scientific journal Nature. Later on, professor Kauranen's studies focused especially on environmental health, such as the adverse effects of radioactive radiation and heavy metals and the effects of fluoride on bone strength. Pentti Kauranen was invited to become a member of the Finnish Academy of Science and Letters in 1973.

The start of Kauranen's research career coincided with the great powers testing nuclear explosives in the atmosphere. Kauranen realized that he could use his training as a radiochemist to study the spread and health effects of nuclear fallouts. His research led to a crucial and surprising discovery. Finnish Lapland and other polar regions have traditionally been seen as areas where the environment is clean and where human interference with nature is minimal. However, the measurements done by Kauranen's team showed that the Sámi people living in Lapland were particularly vulnerable to radioactive radiation exposure resulting from nuclear fallout. The Sámi diet includes a lot of reindeer meat, and reindeer eat lichen. Unlike plants, lichens obtain nutrients from the air and rainwater. Lichens also grow extremely slowly. Radioactive material is therefore accumulated in the food chain as the lichen may absorb substantial amounts of dust from nuclear explosions before it is eaten by the reindeer. The findings had a strong impact on the great powers who first reduced the number of atmospheric nuclear tests and soon gave them up almost entirely.

Kauranen's experience was once again needed in 1986, in monitoring the harmful effects of the meltdown of the Chernobyl nuclear reactor. Radioactive dust caused by the explosion spread widely across Europe and also fell in Finland, especially with rain. This time, studying the nuclear fallout also required the input of meteorological researchers in addition to radiochemists. It

was a particular stroke of luck that the weather radar on the roof of the Porthania building at the University of Helsinki was active during the spread. This allowed researchers to focus on ground sampling of the fallout in the areas of rainfall after the accident. The results from these studies were published in prestigious scientific journals. These scientific findings among other things paved the way for Finnish cheese to be re-accepted as an import to the US soon after the nuclear accident. The results also showed that the health effects of the fallout were not severe in Finland. The biggest health risk in Finland was eating mushrooms picked from a few known areas, where higher levels of radioactivity were present. During the Cold War, one had to speak cautiously about the nuclear tests of the great powers and their negative effects. Even scientific journals would write about these topics in a roundabout way. At the time of Chernobyl, Finland was politically less constrained in this respect than previously.

Pentti Kauranen also studied the health effects of mercury, fluoride and lead. Mercury was commonly used in the Finnish wood processing industry to prevent the build-up of slime. As a result, mercury, which is toxic to humans, accumulated especially in predatory freshwater fish. Due to the warnings of scientists studying environmental health, mercury was eventually abandoned in the wood processing industry. Kauranen's fluoride studies were interesting especially from the perspective of Kuopio residents. Kuopio is the only city in Finland where the drinking water has been fluoridated. The aim of fluoridation is to prevent dental caries. Due to opposition from residents, the fluoridation of drinking water ended in Kuopio in 1992. Kauranen also contributed to studies resulting in the worldwide ban on the use of toxic lead compounds as additives in petrol. Lead additives in petrol were used to prevent engine knock.

Pentti Kauranen also had time for many hobbies. He was the uniting force when the family association of the Kauranen family of Pyhäjärvi was established. He was the first chair of the family association, or the head of the family. Having held this position of trust for a long time, he then became the lifetime honorary chair of the family association, or alderman. One of Kauranen's hobbies says a lot about his incredible memory and perhaps also partly describes what he was like as a person. At the young age of seven, Kauranen memorized by heart all the railway timetables in Finland. In all the decades since then, it was important to him to memorize all the changes that were made to the railway timetables.

Pentti Kauranen had a humane outlook on life and a broad interest in social issues. Having experienced war as a child, he had had to live through dramatic moments in history that shaped the nation and the entire world. He recorded this history by writing about his personal experiences and those of many of his relatives. Kauranen retained his sharp wit and exceptional memory until the last days of his life. While living in a home for the elderly, he would regularly study the life of a great man or woman of his choice and then give a presentation on this person to the other residents of the home. Kauranen gave the last of his popular presentations just a few months before he passed away.

Pentti Kauranen met his spouse Sirkka-Liisa (née Mikkonen) at an event organized by YKY, a Christian student organization.

Sirkka-Liisa worked as a teacher of Finnish language at different secondary schools, Kuopio Technical College and Kuopio Academy of Design, among other places. The spouses' journey together lasted 62 years. Pentti was a widower for four years. Pentti is missed by two sons and one daughter, and three grandchildren. As a father and a grandfather, he was warm and caring.

When he wanted to relax, Pentti Kauranen would go to his holiday cottage. It is located on the shore of Lake Pielinen so that the beautiful national landscape of Koli can be seen from the cottage. He had built the cottage partly with his own hands. It was there that he would enjoy cross-country and downhill skiing in the winter and hiking in the summer. Pentti Kauranen was conciliatory and patient by nature. He was not afraid to go into tough negotiations, because he believed he could settle even difficult conflicts – and indeed he was often able to do so. Pentti was always honest and upright in everything he did. He was also modest and never boasted about his achievements. The effects of such modesty could also be seen when gathering information for this obituary. Even Pentti Kauranen's closest colleagues and relatives knew very little about the many merits of his career.

Obituary by Ilkka Kauranen, Reino Laatikainen and Jouko Korppi-Tommola