HOKKAIDO UNIVERSITY

Title	Profile of Professor Katsuhiro Kikuchi, Dr. Sci
Author(s)	Uyeda, Hiroshi
Description	"List of publication" あり
Citation	Journal of the Faculty of Science, Hokkaido University. Series 7, Geophysics, 11(1), 1-26
Issue Date	1998-03-20
Doc URL	https://hdl.handle.net/2115/8922
Type	other
File Information	11(1).pdf

Hokkaido University Collection of Scholarly and Academic Papers : HUSCAP

Katsuhiro Kikuchi

This photograph was taken when Prof. Kikuchi received "The Purple Ribbon Medal (Shijyu Hoshou)", awarded to him as the scientist with the most distinguished achievement in meteorology. (April 1997)

Jour. Fac. Sci., Hokkaido Univ., Ser. VII (Geophysics), Vol. 11, No. 1, 1-26, 1998.

Profile of Professor Katsuhiro Kikuchi, Dr. Sci.

Professor Katsuhiro Kikuchi, Department of Geophysics, Division of Earth and Planetary Sciences, Graduate School of Science, Hokkaido University is known as a leading and outstanding meteorologist and professor in Japan and throughout the world. He is known for his thoroughness and his disciplined attitude in scientific research and recognized for his efforts in education and training. His respective teacher, the late Professor Choji Magono was known as "the Doctor of Cloud Physics (the Doctor of Ame-Kanmuri)" and he in turn has been called "the Doctor of Polar Meteorology" by his fellow workers. After dedicating his carrier to the study of meteorology, he will retire on March 31, 1998, having fulfilled his life's work.

Prof. Kikuchi was born on July 14, 1934 in the town of Shibetsu, Hokkaido, the fifth son of Mr. Chojiro Kikuchi and Mrs. Sayo Kikuchi. Finishing Nakashibetsu High School in 1953, he entered Yokohama National University, where he met the late Prof. Magono. After graduating from the Department of Earth Science, Faculty of Education, Yokohama National University, he entered the Graduate School of Science, Hokkaido University, where he became one of Prof. Magono's first graduate course students. He chose the school because Prof. Magono was driving force behind its graduate course in meteorology. Under Prof. Magono's supervision, he performed many tasks as one of his first graduate students. In particular he made observations on snow crystals in a small laboratory at the top of Mt. Teine. It may not be stretching a point too far to say that Prof. Kikuchi's interest in studying low-temperature types of snow crystals began to crystallize about this time, when he was examining their shapes and types under a microscope. It goes without saying that the world of polar meteorology had not yet come into being.

At the beginning of his graduate course, Prof. Kikuchi obtained Prof. Nakaya's words with autograph on three of Nakaya's books. Their English translations are "There is a mystery at the depth of the earth and the end of the ocean", "There is a glass wall at science and the arts" and "Blessed existence". These words from Prof. Nakaya encouraged him throughout his life in research to investigate the phenomena of the arctic and antarctic regions.

Immediately after he graduated from the master course in 1959, his first assignment as a regular member of the Hokkaido University staff was his appointment as an instructor to Prof. Magono. After taking the doctoral

course of the Graduate School of Sciences, Hokkaido University for two years, in 1962 he was assigned again as an instructor to Prof. Magono. Around this time he joined expeditions to the Mendenhall Glacier in southeast Alaska and to the lake ice of Peters Lake in northeast Alaska. In Japan, he participated in the experiment on natural snow crystals fostered by the late Prof. Magono. In this experiment, young researcher Kikuchi stayed on the summit of Mt. Teine on the outskirts of Sapporo where a pre-fabricated Cloud Physics Observatory had been built by Prof. Magono. Taking part in these experiments, he focused his research work on laboratory experiments on charge generation. He was awarded his doctorate degree in science from Hokkaido University for his work "On the Positive Electrification of Snow Crystals in the Process of Their Melting."

In 1966 he was promoted to an associate professor in the same laboratory. Immediately after his promotion, he joined the 9th Japanese Antarctic Research Expedition to the Antarctic as the first member from the cloud physics group from November 1967 to March 1969. He brought to light a number of snow crystals of low-temperature types including the one known as the Gohei twin crystal. He received "The Prize of the Meteorological Society of Japan". After this experience, he also had the opportunity to join expeditions to the South Pole twice in cooperation with the members of the United States Antarctic Research Programs. Then he started to develop experiments on low-temperature types of snow crystals and arctic aerosols in the arctic regions. In Japan he conducted laboratory experiments to investigate the formation mechanisms of low-temperature types of snow crystals. His interest extended to the mechanism of snowfalls on the Ishikari Plain to make observations of snow depth in detail. At the same time he studied the acidity of natural snow crystals around Sapporo. Not limited to snow, his work extended to the field of heavy rainfalls, as he carried out analytical studies on the rainfall distribution on Hokkaido.

In 1980 he was offered a chair as professor in the Department of Geophysics, Faculty of Science, succeeding to the position of the late Prof. Magono, and from this day forward we can say that he was truly in his element and his scientific work took on a luster.

At the university, Prof. Kikuchi gave lectures to undergraduates on atmospheric physics and geophysics. In his lectures, students have been fascinated by his beautiful color slides. For graduate students, he held seminars on atmospheric analyses. And for the undergraduates assigned to the Meteorological Laboratory, he personally gave guidance on such matters as the handling of

cameras, the use of darkrooms, and so on. Meanwhile he improved the Cloud Physics Observatory on the summit of Mt. Teine for the study of the shape of snow crystals, the contamination of natural snow crystals, and aerosols. Prof. Kikuchi energetically conducted experimental work and field observations on precipitation phenomena.

In the early 1980s Prof. Kikuchi conducted field observations of heavy rainfalls on the southeast slope of the Orofure mountain ranges in southern Hokkaido. This work revealed the mechanisms of rainfall enhancement on the mountain slopes and the seeder-feeder effect in rainfall intensification.

He conducted field experiments in January 1991 on heavy snowfalls in Rebun Island (the northernmost tip of Japan) and in January 1992 at Ishikari Bay, near Sapporo. In the latter observations, for the first such attempt in Japan, four Doppler radar sets attended to construct a multiple Doppler radar observation network. Before these experiments he had already helped the city of Sapporo to construct a system for short-term forecasting of snowfall using a conventional weather radar.

In the polar region, his outstanding activities were recorded in Inuvik, Northwest Territories in Canada by field experiments in "Low-Temperature Types of Snow Crystals and Arctic Aerosols." In this experiment, he succeeded in growing artificial snow crystals of low-temperature types. In 1986 his experimentation extended to the polar region in northern Norway, where he found 18- and 24-branched snow crystals. In 1988 the experiment was conducted in Greenland. In the experiments at Inuvik in 1996 and at Kiruna, Sweden in 1998 a vertical pointing Doppler radar was utilized for the observation. In all such programs, Prof. Kikuchi was always on site giving researchers and students an opportunity to experience nature.

As listed later, along with his numerous research papers, he took every opportunity to observe, think, and write. These papers are listed together at the end of his long list of publications. At every turn, even in observations of small phenomena, his piercing gaze can always be felt.

In 1983, the first publication of Prof. Kikuchi appeared in the Sapporo Library series, titled "Water in Sapporo". It may be considered that this is the beginning of his effort of spreading of meteorological knowledge. He published text books titled "An Introduction to Experimental Meteorology" and "Phenomena of Snowfall and Snow Cover". These are intelligible guidance to experimental and observational meteorology. After his retirement in full honors, we expect his books to be used widely by various universities and students.

Thus Prof. Kikuchi has achieved much in his work, involving Polar Meteo-

rology, Cloud Physics, Mesoscale Meteorology and Atmospheric Electricity in the field of meteorology. Recognition of his work was made in 1997 when Japanese government awarded Prof. Kikuchi with the "Shijyu Hoshou (The Purple Ribbon Medal; The Most Distinguished Achievement Scientist in Meteorology)", "Science and Technology Award" of Hokkaido Prefecture, and the Japanese Society of Snow and Ice granted him the "Distinguished Achievements Award". Further, Prof. Kikuchi has been a director of the Meteorological Society of Japan for a considerable length of time. He has been actively engaged as the chief of the Hokkaido branch of the society and has been an advisor to the Society of Atmospheric Electricity of Japan. He has also been invited on many occasions, to read his papers at international meetings. In 1996, as conference president, Prof. Kikuchi made it possible for the 10th International Conference on Atmospheric Electricity to be held in Japan, in Osaka.

That Prof. Kikuchi could work and do his best in Japan and abroad is due to the infinite wisdom and loving care of Mrs. Kyoko Kikuchi, who cooperated in every way to support his endeavors. Every year for 20 years at the fiscal-yearend farewell party held at the professor's home, Prof. Kikuchi's staff, foreign students, graduating students, and seniors, a total of about 20 members have gathered. When visitors from all over Japan and foreign guests come to Sapporo, Prof. and Mrs. Kikuchi invite them to their home, where Mrs. Kikuchi prepares a delicious party dinner for their guests. The visitors enjoy the party, and amid the flow of drinks, the talk invariably turns to discussions of research work of the past and future. With their two sons graduated from Hokkaido University and one daughter happily married, the Kikuchis are already the grandparents of one child. When the talk turns to his grandchildren, the Professor seems to be an ordinary contented grandfather, yet when confronted with problems in his work, he remains the top-notch scientist that he is.

In the Department of Geophysics, Faculty of Science, Division of Earth and Planetary Sciences, Graduate School of Science, and Graduate School of Environment of Hokkaido University during his 18 years as a professor, he has taught at least 100 undergraduates in his laboratory. More than 20 graduates, including people from the Republic of Korea, Russia, and Bangladesh, have taken their doctor of science or doctor of philosophy degree under the guidance of Prof. Kikuchi. These graduates are now active in their respective fields in various parts of the world.

Prof. Kikuchi spent his boyhood days on the east coast of Hokkaido island, which faces the Sea of Okhotsk. In this frigid climate, where winter brings a silver sheen of sea ice, may have inspired his wonderment at the divine rules of

Mother Nature that led to his abiding interest, until his retirement, in polar meteorology. Now the cooperative study with Canada, Norway, Sweden and Greenland, the "Expedition on low temperature types of snow crystals, arctic aerosols and water vapor transportation in the arctic region," is concluding and facing a new stage. Thus he has finally made rendezvous with his cherished dream.

On the occasion of Prof. Kikuchi's retirement we, his team members and faithful students, wish the Professor the very best of everything in his years to come, and good health and prosperity to him and to his family.

Hiroshi Uyeda