
In memoriam – Kazuo Komagata (1928 – 2022)

Mitsuo Sakamoto^{1,*} and Ken-ichiro Suzuki^{2,*}



Professor Kazuo Komagata.

Microbiologists who knew Professor Emeritus Kazuo Komagata personally will be saddened to learn that he passed away on 9 September 2022 (at 93 years old).

Prof. Komagata was born in 1928 into a country doctor's family and grew up in the small town of Urasa in Niigata Prefecture, 200 km north of Tokyo, Japan. His father was a physician, and his mother was a nurse. During World War II, in 1945, he entered the Department of Agricultural Chemistry, Morioka College of Agriculture and Forestry. After graduation in 1948, he became a research student in the Laboratory of Fermentation, Faculty of Agriculture, the University of Tokyo. The laboratory was under the directorship of Prof. Kin-ichiro Sakaguchi and Prof. Kei Arima. He worked for Prof. Arima, who later served as President of the International Union of Microbiological Societies (IUMS) in 1986–1988, on aromatic-compound degrading bacteria as a research student for several years. In 1954, he moved to a newly established institute, the Institute of Applied Microbiology (IAM), at the University of Tokyo. He worked at the taxonomy and preservation laboratory headed by Prof. Hiroshi Iizuka. During the studies on bacteria in rice, microorganisms in petroleum and natural gas fields in Japan, he isolated a large number of bacteria, including pseudomonads and actinobacteria, but the taxonomy at that time could not give taxonomic positions to them clearly. Consequently, this experience raised his interest in bacterial systematics.

In 1960, he moved to the Central Research Laboratories of Ajinomoto, a pioneer manufacturer of sodium glutamate. He was asked to establish a laboratory of microbial systematics because the company recognized the importance of microorganisms for future development and patent strategy. During work for the company, he proposed new taxonomy of coryneform bacteria, including glutamic acid producers, by introducing chemotaxonomy. He received his PhD in 1960 from the University of Tokyo for taxonomic study of the genus *Pseudomonas*.

Author affiliations: ¹Microbe Division/Japan Collection of Microorganisms, RIKEN BioResource Research Center, Tsukuba, Ibaraki 305-0074, Japan;

²Tokyo University of Agriculture (Visiting Professor), Setagaya-ku, Tokyo 156-8502, Japan.

***Correspondence:** Mitsuo Sakamoto, sakamoto@riken.jp; Ken-ichiro Suzuki, microtaxonomist3212@gmail.com

Abbreviations: IAM, Institute of Applied Microbiology, the University of Tokyo; ICSB, International Committee on Systematic Bacteriology; ICSP, International Committee on Systematics Prokaryotes; IUMS, International Union of Microbiological Societies; JCM, Japan Collection of Microorganisms, RIKEN; WFCC, World Federation for Culture Collections.



Fig. 1. The 11th International Conference on Culture Collections (ICCC 11) at Goslar, Germany in 2007. From left: Professor Kazuo Komagata and M. Sakamoto.

In 1968, he returned to his home laboratory at the IAM, the University of Tokyo as an associate professor. He began to educate and train students and fellows and initiated the study of microbial systematics. He focused the study on chemosystematics, such as the cellular fatty acid composition, quinone systems, DNA base composition and DNA–DNA relatedness. He was promoted to Professor in 1978, retired in 1989 from the University of Tokyo at the official retirement age, and became Emeritus Professor in 1989. K. S. was a PhD student of Prof. Komagata and received a degree in 1982.

In 1981, Prof. Komagata was appointed Director of the newly established culture collection, Japan Collection of Microorganisms (JCM), RIKEN (formerly the Institute of Physical and Chemical Research), and served concurrently as professor for IAM, the University of Tokyo. Prof. Komagata's task was to build up the foundation and development of a 'research-oriented' culture collection. JCM has grown into one of the leading culture collections in the world. K. S. worked at JCM under Prof. Komagata's directorship for enrichment of microbial resources of JCM and taxonomic studied of bacteria.

After retirement from the University of Tokyo and RIKEN in 1989, he moved to Tokyo University of Agriculture in 1992. Prof. Komagata was highly cultured, receptive and generous. M. S. received a PhD in 1997 from Tokyo University of Agriculture supervised by Prof. Komagata for 'Aerobic metabolism of lactic acid bacteria' under the guidance of Prof. Komagata. M. S. had obtained a position at JCM in 1997 by recommendation of Prof. Komagata. Prof. Komagata left Tokyo University of Agriculture in 1999 at the retirement age. In Tokyo University of Agriculture, he focused the study on the taxonomy of acetic acid bacteria. Consequently, he established two new genera *Asaia* and *Kozakia*.

Prof. Komagata served as member of the Subcommittee on *Corynebacterium* and coryneform bacteria, of the International Committee on Systematic Bacteriology (ICSB) (1974–1994), as chairman for the Committee on Data Coding, the World Federation for Culture Collections (WFCC) (1976–1981), as commissioner for the Judicial Commission of the ICSB (1982–1994), as a member of the Subcommittee on *Flavobacterium* and *Cytophaga*-like bacteria (1986–1990), and as the vice-chairman of ICSB (1986–1994) (Fig. 1).

In recognition of his contributions as mentioned above, he became an Honorary Member of Society for Bioscience and Bioengineering, Japan in 1988, an Honorary Member of WFCC in 1990, a Life Member of ICSB (at present the International Committee on Systematics Prokaryotes: ICSP) in 1994, and a Life Member of the Japan Society for Bioscience, Biotechnology and Agrochemistry in 1998. He received an award from the Food Hygienic Society in Japan for microbial studies on frozen food in 1968, the Senior Scientist Award from the Japan Society for Bioscience, Biotechnology and Agrochemistry in 1988, the Van Niel International Prize from the Division of Bacteriology and Applied Microbiology, IUMS in 1999, and the Bergey Medal from the Bergey's Manual Trust in 2005. In addition, the Japan Academy awarded Prof. Komagata the Duke of Edinburgh Prize for 'Studies on microbial taxonomy and development of microbial culture collections' in 2014.

Luecobacter komagatae, *Methylobacterium komagatae* and two genera, *Komagataeibacter* and *Neokomagataea*, were named after Prof. Komagata in 1996, 2008, 2011 and 2012, respectively.

Many students received degrees under supervision of Prof. Komagata at the two universities and were working with the philosophy of Prof. Komagata. Prof. Komagata will be remembered by the community as well as his colleagues and students as a great microbial taxonomist. We must pass on the spirit of Prof. Komagata to the next generation in Japan and the world.