

## OBITUARY

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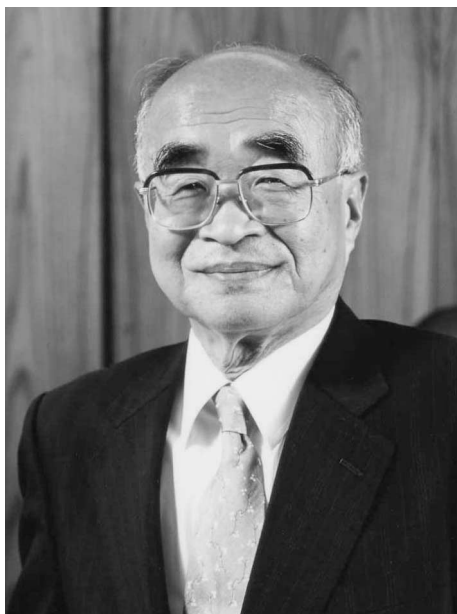
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**Koscak Maruyama  
(1930–2003)**

Dr. Koscak Maruyama, Professor Emeritus of Chiba University and a former president of the Zoological Society of Japan, passed away at the age of 73 in Tokyo on November 19, 2003. He continued to work until two days before his death as the President of National Center for University Entrance Examinations and completed his final manuscript three days before, behaving as if he was not in bad health conditions.

He was born on June 16, 1930 and grew up in Tokyo. He received both undergraduate and graduate education at Faculty of Science of the University of Tokyo. The University of Tokyo conferred the degree of Doctor of Science on him in 1958. He joined the Department of Biology at the college of General Education at the Komaba campus of the University of Tokyo as an instructor in 1965, while he was in the graduate school of the University of Tokyo. From 1959 to 1962, supported by a Helen Hay Whitney fellowship, he spent two years as a research associate at Dr. John Geregely's laboratory in Massachusetts General Hospital at Boston and additional several months in NIH at Bethesda and University of California at San Francisco. After being back to Japan, he joined Professor Haruhiko Noda's laboratory at the Department of Biophysics and Biochemistry, the University of Tokyo. He then moved to the Department of Biology at the college of General Education, University of Tokyo in 1965 as associate professor. In 1972, he was appointed to professor at the newly established Department of Biophysics, Faculty of Science, Kyoto University. In 1977, he moved to Chiba University as professor in the Department of Biology and served as Dean of Faculty of Science in 1994 and President of Chiba University from 1994 to 1998. After retirement from Chiba University, he became the President of National Center for University Entrance Examinations (1999–2003).

Dr. Maruyama was interested in the life and behavior of insect, especially wasp, since his childhood and dreamed to be an entomologist. He already published his first scientific report describing behavior of wasp at the age of 13. When he was a graduate student at the University of Tokyo, however, he happened to meet a book named "Chemistry of Muscular Contraction" written by Albert Szent-Gyorgyi at a bookstore nearby the university. This book inspired him to study muscle biology. Although his initial research theme in the graduate school was on respiration and enzymatic activity in developing sea urchin and medaka, he was more interested in muscle proteins in insects. His thesis work was on insect actomyosin. He worked on the interactions between myosin and actin in Massachusetts General Hospital, NIH and University of California at San Francisco from 1960 to 1962. Returning to Japan in 1962, he became interested in the question of how vertebrate skeletal muscles constitute highly organized structure and in particular, how the thin filaments are maintained at a uniform length. In the laboratory of Professor Noda, he extracted muscle fibers under different conditions to see whether he could find something that would affect actin filament length. Using a flow birefringence technique to quantify the average actin filament length, he reached a conclusion that actin filaments prepared from rabbit striated muscle using 0.6 M KI were shorter than those purified from acetone-dried muscle

powder by conventional methods and that the KI extract contained a protein that diminished the flow birefringence and viscoelasticity of actin filaments. This protein was purified and characterized later and termed  $\beta$ -actinin. On the other hand, he characterized another actin-interacting protein,  $\alpha$ -actinin, that promotes gelation of F-actin solution in collaboration with Professor Setsuro Ebashi at Medical School of the University of Tokyo. These findings represented the beginning of the discovery of proteins that regulate actin filament dynamics in a variety of cells, a topic that became very fashionable a decade later. For these studies, he received the Young Investigator Award of Japanese Biochemical Society in 1966, the Award of Zoological Society of Japan in 1971 and the Matsunaga Prize in 1973.

In 1976, Dr Maruyama achieved another epoch-making work, namely finding of a novel huge elastic protein termed connectin which longitudinally links contractile units of muscle contractile apparatus and serves mechanical and architectural functions. It had long been recognized that muscle contractile apparatus is constituted by two different filaments, namely myosin and actin filaments, but the finding of connectin filaments provided muscle physiology area with a new scope that an additional filament is involved in structure and function of the muscle system. The finding of connectin and his pioneering work on this protein became the foundation of a new research field in muscle biology with contribution from many laboratories around the world. For the studies of connectin, he was awarded the Asahi Prize in 1995 and the Medal with Purple Ribbon in 1996.

Dr. Maruyama went on to a long career as not only a researcher as described but also as a teacher and administrator. While he was a president of the Zoological Society, he spent a lot of energy for well-balanced development of each field of zoological science; he paid particular attention to the development of the studies of biodiversity, although this was not his research field. He not only published many scientific papers but also wrote numbers of monographs, both academic and educational. The books he wrote made great contribution for promoting scientific interest in young generation. He provided young students and researchers with warm-hearted encouragement and support. This was one of the most distinguished his characteristics.

Takashi Obinata  
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