

By

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HIROSHI TAMIYA was born on January 5, 1903 in Osaka City as the sixth and last son of KOREHARU TAMIYA, a medical doctor. In his boyhood, HIROSHI loved to observe plants and animals. He and his friends used to dip water out of a pond near his home and observed various microbes under a microscope, which was in his father's office. When he was a high school student (old system), he often visited the Institute for Infectious Research (currently the Institute of Medical Science) of the University of Tokyo, where his brother TAKEO (later Director of the Faculty of Medical Sciences, University of Tokyo, and then 1st President of the National Cancer Centre) was working. Through contact with young and energetic scholars, he was attracted to studies with microorganisms. He was offered to assist in some of the experiments and even did one independent experiment during the summer vacation. Therefore, it was not surprising that he decided to enter the Botanical Institute of Tokyo Imperial University in 1923, since this was the only institute where one could study microbiology in the Faculty of Science.

HIROSHI recalled later that it was most fortunate for him that he met two scilled teachers in the Botanical Institute. One was Professor KEITA SHIBATA (1877—1949), an uncommon scientist who introduced chemistry into botany in Japan; the other was Dr. HIROTARO HATTORI (1875—1965), a lecturer of bacteriology. From the time HIROSHI chosed as supervisor of his graduation thesis Prof. SHIBATA was to him a mentor throughout his life. Dr. HATTORI not only turned over to him his lectureship but also gave him a position in the Tokugawa Institute for Biological Research, where HIROSHI stayed until the day of its closing.

HIROSHI finished at Tokyo Imperial University with the thesis "Studies on Metabolism of *Aspergillus oryzae*" and then moved to Graduate School of the same university.

He published 16 papers on *Aspergillus* during the 7 years from 1926 to 1933. As a subject for his graduation thesis, Dr. SHIBATA suggested to HIROSHI to study the change in pH values in the culture medium during the growth of *Aspergillus*. However, enchanted by the studies of OTTO WARBURG and OTTO MEYERHOF, the subject was changed to respiratory physiology after the third paper. In the same 7 years he published over 10 papers with organisms other than *Aspergillus*, which included studies of cytochromes. This was the time when HIROSHI was 23 to 30 years old and showed the highest productivity in his life. When he was appointed one of the editors of Archiv für Mikrobiologie he was only 27 years old and had not been awarded a Ph. D.

From 1928 through 1939 was a period of cytochrome studies, his studies on photosynthesis started in 1941. In 1943, Dr. TAMIYA succeeded Prof. KEITA SHIBATA and was appointed director of the Tokugawa Institute for Biological Research in 1946.

After World War II, when many Japanese were suffering the shortage of food, Prof. TAMIYA decided to concentrate the studies conducted in the Tokugawa Institute on the mass culture of *Chlorella* as a source of food. The open circular culture method devised by him is still operating in factories in Japan and Taiwan. A method of synchronized culture of *Chlorella* was a byproduct of these studies. In 1955 he moved from the Botanical Institute to the Institute of Applied Microbiology. However, he spent most of his time in the Tokugawa Institute and did not show up in his office in the University of Tokyo unless his presence was officially requested. This attitude did not change even after he was appointed director of the Institute of Applied Microbiology in 1961.

HIROSHI mentioned that he could hardly recall a time that he did an experiment without the desire to do so. Each experiment was done with all his effort, with the conviction that it was the most important and interesting research possible. There was only one exception, the graduation work according to the suggestion of Prof. SHIBATA, which he carried out with not so much engagement. His contribution to science is truly deep and wide. It extended from applied research (mass culture of *Chlorella*) to chemotaxonomy. Most of the experimental work was done with microorganisms. He was especially talented in kinetical analysis of biological phenomena. Studies on photosynthesis by the method of intermittent illumination, on the relationship between turgor pressure and suction force of plant cells, and the studies on the Weber-Law and Weiss-Law are only a few examples which show such talent.

It must also be mentioned that Prof. TAMIYA was one of the founders of the Japanese Society of Plant Physiologists and served for the International Biological Programme as Vice President.

If recognition from Germany is also mentioned, Prof. TAMIYA was appointed member of Deutsche Akademie der Naturforscher Leopoldina and Ehrenmitglied der Deutschen Botanischen Gesellschaft in 1958 and 1961, respectively. The title of Doctor h. c. was awarded to him from the University of Tübingen in 1963.

One of his friends from abroad summarized Prof. TAMIYA as follows: "beyond his countless novel works in science, HIROSHI was the Teacher of teachers".

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