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ÉLOGE OF THE LATE YUJI SHIBATA JANUARY 28th, 1882–JANUARY 28th, 1980

KAZUO YAMASAKI†

On January 28th, 1980, Professor Yuji Shibata, a member of the Japan Academy, who was really the father of coordination chemistry of Japan, passed away in Tokyo at the age of exactly ninety-eight.

he stayed for three years, one year each in Leipzig (under Arthur Hantzsch), Zürich (under Alfred Werner), and Paris (under Georges Urbain). In Zürich (1911–1912) he succeeded in preparing optically active $[\text{Co}(\text{NH}_3)_2(\text{en})_2] \text{Br}_3$, which was the first example of an optically active $[\text{Co}(\text{b}_2)(\text{AA})_2]$ -type complex, AA and b being bidentate and unidentate ligands respectively. In Paris he measured the absorption spectra of several cobalt complexes.

After coming home in 1913, one year before the outbreak of the First World War, Shibata was appointed associate professor of his alma mater, where he engaged actively in spectrochemical studies of metal complexes. He studied the absorption spectra of more than 120 complexes of various metals such as cobalt, chromium, nickel, and copper, and he published the results in French in the *Memoirs of the College of Science, University of Tokyo* during the period 1915–1920. These papers represent the pioneering work in the field of spectrochemical studies of metal complexes. Furthermore, in 1921 he devised a spectrochemical method for detecting complex formation in solution. The so-called method of continuous variation reported by Paul Job in 1925 is the same principle as that of Shibata.

In 1920 Shibata and his elder brother Keita Shibata, who was the professor of phytochemistry at the University of Tokyo, discovered an interesting oxidation reaction of myricetin, a flavonol derivative, by cobalt complexes. Not only myricetin, but also polyphenols like pyrogallol were catalytically oxidized by cobalt complexes such as $[\text{CoCl}(\text{NH}_3)_5] \cdot \text{Cl}_2$. The Shibatas proposed the activation theory of water molecules to explain this oxidation reaction and they continued the research for more than 20 years. The results obtained by them were published in 1936 in a book, "Katalytische Wirkungen der Metallkomplexverbindungen."

All of the coordination chemists in Japan, the number of which is now over 350, are either directly or indirectly students of Shibata. Among them, the late Ryutaro Tsuchida, who first proposed the spectrochemical series in 1938, is well known. In

Yuji Shibata was born in Tokyo as the second son of Shokei Shibata, an eminent pharmacologist who had studied organic chemistry in Berlin under August Wilhelm von Hofmann during the period, 1870–1874. Dr. Shibata graduated from the Department of Chemistry, College of Science, University of Tokyo in 1907, and he went to Europe in 1910. In Europe

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1921, Shibata initiated geochemical studies in Japan by applying emission spectrography to the analysis of minerals containing rarer elements.

After retiring from the University of Tokyo in 1942, he devoted his efforts to establish the Faculty of Science, Nagoya University (1942–1948), and Tokyo Metropolitan University (1949–1957) in the difficult years during and after World War II. He was

President of the Japan Academy for eight years (1962–1970), and for his lengthy meritorious service he was honored as Distinguished Person in Cultural Service. Coordination chemists at home and abroad will remember Professor Yuji Shibata as the president of the Tenth International Conference on Coordination Chemistry held in Japan in 1967, and they sorely miss him.