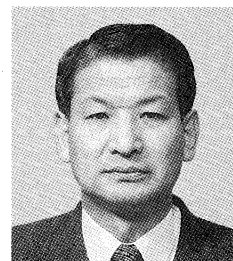


Reinforce the Educational System for Further Development of Synthetic Organic Chemistry



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I have long been engaged in organic synthesis in the field related to biological sciences. Historically, starting from the great discovery of “oryzanin = vitamin B₁” by Umetaro Suzuki in 1910, Japanese scientists have focused on the biological phenomena concerning with life, food and the environment. They worked to isolate bioactive substances and determine their structures, synthesize those molecules, and analyze biological functions to contribute to enhancement of human life. Organic synthesis has played an important role to afford key substances in this field. Recent progress of gene technology, however, has changed the current of science and studies on biochemical analysis seem to be the main stream in biological sciences. But, substances are always a powerful tool requisite to develop new area in any field of natural science. Therefore, organic synthesis must be one of the most essential technologies to afford key substances.

The level of synthetic organic chemistry in Japan has now reached almost that of top of the world. Starting from the chaotic situation after World War II, we have devoted efforts to learn from and follow developed countries like the US and Western Europe. It is remarkable that our diligence, patience, ambition and motivation accelerated the development of this field of science by the production of outstanding results.

But, as regards the educational system at the graduate school level to foster advanced researchers and the flexibility of the research system at academia, I do not think that Japanese academia is well organized yet. We established the graduate school at our university a half century ago and students have mainly been trained through experimental works. In fact, it worked extremely well to develop the research level of Japan by increasing the numbers of ambitious students along with the growth of the national economy. Unfortunately, we have not employed the educational system such that graduate students study not only their major field but also other related fundamental subjects, and undergo intensive training how to present and discuss their ideas and opinions properly as a scientist at the early stage. These important matters have mostly been left to efforts by individuals or at best research groups. We should seriously discuss how to change our traditional way of training young students, and strive to establish an efficient system with mobility at the graduate school level for creating well-trained scientists.

As the scientific world is now expanding rapidly, chemists are required to have not only more knowledge but also broad outlook. I believe that better results can be achieved in the future through the improvement of the training system at the higher education level. In any case, higher level of synthetic organic chemistry is always demanded and is essential ultimately for development of wide areas of science. We must dedicate our chemistry more to contribute to human welfare.