Tenth Birthday of Institute of Molecular Sciences

We are here to congratulate the Institute of Molecular Sciences on its tenth birthday.

I feel a strong affinity with the institute for several reasons. My own institute, the Royal Institution in London, is, I think, the oldest research institution in the world which is still active, whilst the I.M.S. must be the youngest, at least the youngest which has already reached a position, in ten short years, of real distinction in research. Both enjoy an enviable independence in their research. Both have a director who is himself a practicing scientist rather than an administrator, and both are advised, benevolently, by a council whose members are also practicing scientists and therefore know not to interfere with something that is working well.

The foundation of the I.M.S., its modus operandi, its fine laboratories, retaining the beauty of their original site, and the quality of its scientific staff, are a grand tribute to the enthusiasm and foresight of its first director, Professor Hideo Akamatu. At the time of the I.U.P.A.C. meeting in Tokyo in 1977, Professor Akamatu took me to see what was being created in Okasaki. My admiration for the I.M.S. began with that visit and I have been happy to serve as one of the two foreign members of its Council, and, through the Royal Institution, to have enjoyed an exchange of scientists and ideas. Real progress in science has already been made here, especially in the areas which are best known to me, such as free radical

spectroscopy, the primary processes of photosynthesis and photochemistry and, on the more applied side, the photochemical conversion of solar energy.

I was delighted when I learned that Professor Akamatu's successor was to be my old friend Professor Saburo Nagakura, whose very great personal contributions to molecular science are known and admired far beyond these shores.

The advance of Japanese science over the last few decades has been one of the wonders of the modern world. The only excuse which the rest of the world has been able to offer in explanation of its inability to advance at the same rate, has been that Japanese science has relied heavily on, and benefited from, earlier fundamental work done in other countries. Of course it has; that is what science is all about and we would be the first to complain if Japanese scientists, or those of any other country didn't read our publications and benefit from them. We have all much to learn from the way that industry and academic science work together in Japan, and from the equally effective collaboration which seems to exist between management and scientists.

The rapid translation of scientific discovery into commerically successful products is something at which the British once excelled, in the nineteenth century. They were overtaken by the United States and some European countries (particularly Germany in organic chemistry) in the early part of this century and all have been overtaken by Japan since the middle of the century.

All this illustrates that Japan cannot assume that it will always be in the lead. Nobody knows what country will be next. China perhaps? Although some of the leading scientists of the world are Japanese, and the number is increasing, Japan's contributions to pure science have not equalled its technological development and this has given an excuse to many of the politicians in other countries to claim that support of pure science is not an important factor in economic and technological progress. It is adequate, and more economical, they say, to rely on other countries to do this and to concentrate on applying and exploiting their results.

The false conclusion has not been swallowed in Japan and there is a strong movement here to become a leader in pure research, not just for reasons of prestige nor even just because of a thirst for knowledge but because they realise that, without a sound foundation of basic research, and the expertise which results from this, no country can compete effectively in the modern technological world. Good fundamental research is an absolutely necessary condition for economic and industrial prosperity but it is not a sufficient condition in itself. Other things are necessary as well and Japan possesses these other things more than most countries. But the birth of institutions like I.M.S., which is devoted essentially to the pursuit of natural knowledge, shows that the importance of this activity has been recognised and it is therefore an encouragement to scientists in all countries.

Another memorable success of the Institute has been the series of Okakasaki conferences which have brought together many Foreign visitors and their Japanese colleagues. I have had the pleasure of attending three of these and they seem to me to be just the right size, as indeed is the Institute itself. I am not in favour of huge conferences or huge research centres; these should be large enough so that one has enough people to talk to but not so large that many of the scientists are strangers to each other. This is one of the reasons that the I.M.S. is such a friendly and happy place to work in.