

Postscript

It must have been about 1979. Dr. Toshimitsu Nakashima and Dr. Takayoshi Toyota from the Japan Marine Science and Technology Center came to visit me at the University of Tsukuba, where I was working at the time. I had happened to discover that marine life was particularly abundant in the currents around the Izu islands and the area of Sagami Bay, was convinced that it had something to do with upwelling, and was doing some research into the reaction of marine life to deep sea nutrients. They had already noticed how rich DOW was in nutrients, and were doing experimental study of increases in marine life when DOW and surface water were mixed together. It was they who first made me think of DOW as a resource.

We continued our separate studies, frequently getting together to exchange information and ideas, and expand our approach to the subject. I got to know of OTEC, and how it had made considerable progress on account of the recent world energy crises. It was also at one of our meetings that I first met Mr. Hiroshi Kamogawa of the Toshiba Central Laboratories, who was stressing the combined use of DOW together with other resources.

Mr. Tsutomu Matsuura of the Fisheries Agency was at that time on secondment to the Science and Technology Agency, where he, too, became infected with the enthusiasm of Drs. Nakashima and Toyota; this led to national involvement in DOW research. Those state-funded experiments in Toyama Bay and at Muroto ended successfully in 1991, but other institutions have not let the matter drop. Kochi Prefecture has set up its DOW Research Center, which aims at practical application of DOW as a resource, while Kochi Prefecture, too, has plans for R&D at the prefectural level. There are also other projects elsewhere in Japan.

Before you read this book, you probably did not realize the extent of the resources in the oceans. Maybe the sea, being so close at hand and apparently so easy to exploit, has not sufficiently attracted the human spirit of adventure and challenge. But in fact, the amounts of DOW that would be involved are so great, and the concentration of the valuable materials it contains so low, that things are not really that easy. We have not yet properly approached the techniques for extracting low-concentration materials. And those techniques are so challenging that even the great Prof. Claude, after 30 years of constant effort, was forced to give up. The principle is straightforward; the practice

is far from straightforward.

The huge potential of DOW is now recognized worldwide. The next thing is to discover how it can assist us in our evolution from mere technocrats to ecocrats. But there is still an overwhelming tendency for us to try to solve the problems that the world faces by the old technocratic methods. We forcibly impose solutions to the problems of resources, energy, food supply and the environment by calmly creating new energies, new artificial materials, even new life forms. But is that really the best solution for the confined, restricted Spaceship Earth? Surely that can only lead to new and even greater problems. We, as humans and as biological organisms ourselves, simply must pay attention to the need to support our society, and improve our own real wealth and happiness, within the mechanisms of natural renewability. I have written this book to tell you about this, and to ask you all to become what I call ecocrats, for the good of future humanity.

It may take a while for us all to evolve into ecocrats — several generations, maybe. Scientists like me are doing our best, but our hopes lie with younger people, for without your interest and your conscious participation, no progress can be made. Please do think about this, and please do help.

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