Proceedings of the 8th Natural History Symposium November 30, 1996

Present and Future on Biology of *Porphyra*

EDITED BY

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Preface

I would like to thank you for taking part in the 8th Natural History Symposium "Present and Future on Biology of *Porphyra*", as the representative of the organizing committee. The purpose of this symposium is to introduce the situation of the biological research, applied research and interdisciplinary research of *Porphyra*, and to discuss the future on biology of *Porphyra*. The biology of *Porphyra* is one of the significant science field which includes the large scientific field, taxonomy, ecology, genetics, molecular biology, thremmatology, strain preservation and cultivation technology, etc. And Japan acts as the leader of this field.

However, *P. tenera* which is very familiar to us as Nori was designated as critically endangered species (Fisheries Agency, 1994). Namely it is considered that *Porphyra* is on the verge of extinction on the earth.

On Environmental Developing Meeting of the United Nations in 1992 (Rio de Janeiro, Brazil), Convention of Biological Diversity was proposed. And recently the conservation of the diversity of gene, species and ecosystem is needed. The biological diversity means not only the species diversity but also the intraspecific genetic diversity and the organic association in the ecosystem. Furthermore in the higher order system, it is the very wide concept that involve the diversity of the habitat and landscape which is a joint creation of man and nature. It is considered that problems of the diversity of gene and ecosystem of *Porphyra* will be discussed as the point at issue.

I have not studied *Porphyra* but land plants especially its ecology. I have studied bamboo for a long time. Once I received a request to make a bamboo suitable for Nori-hibi (pole) in length and diameter. More recently, it is said that land water which flows into ocean through forest floor of maritime forest have great influence on the inhabiting of coastal animals, for example, oyster. Therefore, it is considered that the relationship between the sea and the land is very close. Dr. Haslan, Wisconsin University (U.S.A.), the former president of the International Ecological Society, has discussed the relationship between the sea and the land in his book "Coupling of Sea and Land Waters".

Today, I am glad of thier participation in this symposium as special lectures in biotechnology and taxonomy, Dr. L. Chen (Institute for Marine Biosciences, National Research Council of Canada) and Professor T. Yoshida (Hokkaido University), president of the Japanese Society of Phycology.

And I would like to talk that this symposium is held in relation to the exhibition "Tokyo Bay, Nori eating culture" which is being held by ten museums and one museum of arts in Chiba Prefecture during April 27, 1996 to February 1, 1997, as the results of interdisciplinary research by 11 staffs. Japanese pepople have established

"Nori eating culture" in utilizing Nori as food stuff among diversified eating behaviors over 1,200 years, from the *Tumulus* periods to modern times.

Finally, I expect very lively discussions in this symposium. Thank you very much for your kindly attention.

-from opening speech at the Symposium-November 30, 1996

M. Mumata

Makoto Numata Director-General Natural History Museum and Institute, Chiba

Editors' Preface

The papaers in *Natual Hisotry Research, Special Issue, Number 3* were developed from presentations at the 8th Natural History Symposium entitled "Present and Future on Biology of *Porphyra*," which was held on 30 November 1996 at Natural History Museum and Institute, Chiba, Japan. This symposium attracted 198 participants from 6 countries for devoted argumentation on *Porphyra* science, "海苔学".

The symposium were aimed at over view of the biology and applied science on *Porphyra* (Rhodophyta, Bangiales), especially in current knowledge on systematics, ecology, life history, genetics, molecular biology, breeding, strain preservation, aquaculture and biotechnology. The goeals of the symposium and the resulting publications are to :

- evaluate historical background of basic and applied sciecne on Porphyra,
- point out and argue current subjects on Porphyra science,
- activate Porphyra science to clear up the current subjects in the near future.

There has been many fruits, as evidenced by the papers in this Proceedings. The editors hope this book stimulate even more interest and attention to *Porphyra* science, and lead to more intensive studies and applications in regions that have not been examined in detail to date.

The symposium, "Present and Future on Biology of *Porphyra*," was promoted by Natural History Museum and Institute, Chiba, established in 1989 and Board of Education of Chiba Prefecture. This symposium is a scientific meeting in relation to the fourth jointly planned exhibition, "Tokyo Bay, Culture of eating Nori—*Nori-wokuu*—", which was held by ten museums and one museum of arts in Chiba Prefecture from April 27, 1996 to February 1, 1997, as the results of interdisplinary research on *Nori eating culture* by 11 staffs. The Organizing Committee was composed of Dr. M. Numata (Chair), Dr. M. Miyata (Secretary General), Dr. M. Notoya (Program Committee Chair), Dr. Y. Endo, Dr. T. Fukiharu, Dr. T. Furuki, Dr. H. Harada, Dr. M. Amano, Dr. K. Saeki and Mr. N. Kikuchi. In additon, financial suuport by the grants from Kajima Scientific Foundation made it possible the harmonious administration of symposium. Editorial board was composed of Dr. M. Miyata (Natural History Museum and Institute, Chiba), Dr. M. Notoya (Tokyo University of Fisheries), Dr. L. C.-M. Chen (National Research Council of Canada) and Dr. T. Yoshida (Hokkaido University).

The editors extend our appreciation to all of the authors who submitted papers, in particular those whose papers we could not include. Your participations made the original concept for this symposium reality. Furthermore we thanks reviewers of the manuscripts for your detailed comments and timely responses, to staffs of National Research Coucil of Canada, Dr. J. S. Craigie, Dr. M. Rice, Dr. C. Bird and Dr. P. S. Shacklock. Your conscientious and thoughtful reviews enhanced the impact of these papers on the discussions of present and future prospects on Porphyra science.

Finaly editors would like to thank all those who helped us to organize the symposium.

March 20, 1997

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Photograph of the Participants

The 8th Natural History Symposium, "Present and Future on Biology of *Porphyra*" (Chiba, Japan on November 30, 1996)

The front row: 1 - Y. Fujita (Nagasaki Univ.), 2 - L. C.-M. Chen (National Research Council of Canada), 3 - M. Numata (Chair, President of Natural History Museum and Institute, Chiba), 4 - M. Notoya (Program Committee Chair, Tokyo Univ. of Fisheries), 5 - T. Yoshida (Hokkaido Univ.), 6 - A. Miura (Aomori Univ.), 7 - Y. Mizukami (National Fisheries Univ.)

The back row: 8 - M. Hara (Hokkaido Univ.), 9 - U. S. Rao (Nagasaki Univ.), 10 - J.-A. Shin (Tokai Univ.), 11 - H. Tsuchiya (Chiba Prefectural Fisheries Experiment Station), 12 - H. Yasui (Hokkaido Univ.), 13 - N. Kikuchi (Natural History Museum and Institute, Chiba), 14 - M. Miyata (Secretary General, Natural History Museum and Institute, Chiba), 15 - J. Kakino (Chiba Prefectural Fisheries Experiment Station, Futtsu), 16 - T. Tanaka (Chiba Prefectural Fisheries Experiment Station, Futtsu), 17 - E. Fujiyoshi (Seikai National Fisheries Research Institute)

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