## PREFACE

This volume contains contributions presented in the International Symposium on Membrane Bioenergetics, which was held on the Island of Spetsai, Greece, July 10-15, 1977.

This symposium was sponsored and supported by the Greek Ministry of Culture and Sciences, International Union of Biochemistry, International Union of Pure and Applied Biophysics, Federation of European Biochemical Societies, Nuclear Research Center at Demokritos and the National Hellenic Research Foundation. On this occasion it is worth adding a few words concerning the location of the meeting and the Spetsai tradition on international conferences. The Anargyrios and Korgialenios School of Spetsai (a boarding high school of the Island) where the symposium was convened, has established its international reputation in the field with a series of successful summer schools on molecular biology, molecular and cell biology and molecular and developmental biology which commenced in 1966. The symposium on membrane bioenergetics represent a departure from the Spetsai tradition and an enlargement of the scientific activities on the Island. Once again participants expressed their satisfaction for the arrangements of the scientific programme of the meeting. Senior scientists in the field have the opinion that they have participated in one of the most successful meetings in bioenergetics. Aside from the scientific merits of the place, Spetsai is the point where three Continents come close together (Africa, Asia and Europe) and indeed the conference was attended by persons from 16 countries. Since scientists and research workers are traditionally ranking among most suitable persons to act as spearheads for increasing understanding and international cooperation, it seems that in this global age of science, Spetsai scientific conferences may serve a dual purpose.

Published records of scientific symposia lose much of their value if publication is unduly delayed. In the present instance, we have chosen to proceed with publication at the expense of omitting the interesting discussion which occurred during the meeting and some of the articles which could not be ready by the time the volume went to press. This symposium volume should be of great value to scholars and educators in the fields of :

Structure and biogenesis of the three membrane systems: mitochondria, chloroplasts and sarcoplasmic reticulum.

Mechanisms of biological oxidation; iron sulphur proteins, interaction of iron sulphur proteins with quinones, photosynthetic electron transport.

Concepts of bioenergetics, ionophores, ionophoric proteins and transport mechanisms. Mechanism of action of bacteriorhodopsin (and rhodopsin) and ATP-

synthetase-ATPase complex and their role in energy transduction or as ion pumps.

Some of the most recent advances in these fields are presented, with emphasis on membrane organization with respect to bioenergetic functions. These advances include the role of biological oxidations, electrical forces and ion gradients in mechanisms of energy coupling. In these areas there has been exceedingly rapid progress some of which is recorded here. The past few years almost as many redox components of the respiratory chain, as were known to exist before, have been identified by low-temperature EPR as iron sulphur proteins. These are now being characterized in terms of how they interact in flavoprotein dehydrogenases and with ubiquinone and the rest of the respiratory chain. Advanced technologies being used to exploit the understanding of membranes and bioenergetics as high resolution $^{31}$P-NMR, ESR-spectroscopy, nano- and pico-second spectroscopy and the use of selective chemical probes for labelling, are well represented in this volume.

Most importantly, we thank each of the authors and other participants whose contributions made the Spetsai Symposium on Membrane Bioenergetics an intellectually stimulating and profitable occasion, finally, we thank one of the authors, Dr. J. Isaakidou for her invaluable endeavours for the success of the symposium.

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