Introduction

In the field of theoretical chemistry and quantum chemistry, Professor Henry Eyring of the University of Utah has played a pioneering role during almost four decades. He has made outstanding contributions to valence theory, to the theory of chemical reaction rates, to the theory of the liquid state, and to quantum biology. Professor Henry Eyring has introduced numerous fundamental concepts and ideas in these areas, and he has had an enormously stimulating effect on the development of quantum chemistry. In making the plans for the 1969 International Symposium on Quantum Chemistry, Solid-State Physics, and Quantum Biology at the University of Florida, the organizers felt that it would be highly appropriate to dedicate this symposium to Professor Henry Eyring in deep appreciation for his many valuable contributions to theoretical chemistry.

This idea was greeted with overwhelming enthusiasm all over the world, and about 230 scientists from more than 20 countries gathered on Sanibel Island, Florida, January 13–18, 1969, to pay their respect to the great pioneer and to discuss current research within his field of interest. Professor Henry Eyring kindly gave the opening lecture at the symposium, but it should be also mentioned that he attended every session—even those going far beyond midnight—and that he participated in many of the discussions. Through his presence, Professor Henry Eyring greatly stimulated the exchange of ideas at this symposium, and he appeared to be more scientifically active than ever before.

The proceedings of the symposium show that Professor Henry Eyring has had an enormous influence on the development of quantum chemistry, and they may even be more important for the future. The proceedings contain most of the invited papers and a large number of the contributed papers. It should be observed that, at the Sanibel Symposia, an essential part of the time is set aside for free discussions, but also that no attempts are made to record this informal exchange of ideas in full. In these proceedings, only such discussion remarks are included as were presented in writing to the secretaries before the end of the conference, and there are hence here and there some breaks in the logical continuity in the discussions. However, even some contributions which were presented in a very short time have been printed in full. It is hoped that, in this way, the proceedings will reflect the current status of quantum chemistry, solid-state physics and quantum biology and part of the discussions going on at an international level.

Even with these restrictions, the editing of the proceedings has been a rather elaborate work, and special thanks go to Professor Yngve Öhrn, Assistant Editor of the International Journal of Quantum Chemistry, for his most valuable work.

The International Symposium on Quantum Chemistry, Solid-State Physics, and Quantum Biology was arranged as the conclusion of the ninth Winter Institute at the University of Florida, organized by its Quantum Theory Project in close collaboration with the Uppsala Quantum Chemistry Group. The organizers would like to take this opportunity to express their sincere gratitude to the U.S. National Science Foundation and to the U.S. Air Force Office of Scientific Research for funds which made the organization of the institute and symposium possible. Our thanks go further to the International Business Machines Corporation, the William G. Selby and Marie Selby Foundation, Gulf Research and Development Company and Monsanto Company for valuable finanical support. The many practical details connected with the symposium were handled by members of the Florida Quantum Theory Project, and their valuable assistance is gratefully acknowledged. We are further indebted to Mr. Howard Dayton, owner of Casa Ybel Hotel, and his staff for their efforts to provide a pleasant and effective environment for the symposium on Sanibel Island.

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