Inflammatory Diseases and Copper

Edited by

JOHN R. J. SORENSON

Inflammatory Diseases and Copper

The Metabolic and Therapeutic Roles of Copper and Other Essential Metalloelements in Humans

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DEDICATION

These proceedings are dedicated to those who made this truly memorable scientific and social Arkansas experience possible. They include: those whose persistent pioneering essential-metalloelement research efforts now provide important background information in support of new and exciting approaches to the understanding and treatment of inflammatory diseases; those who persist in providing new knowledge in these areas; Dr. Harry P. Ward, Chancellor of the University of Arkansas for Medical Sciences, and Dr. L. D. Milne, Dean of the College of Pharmacy, for the academic environment they provide and their personal and financial support; the sponsors,

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and the participants for their persistent efforts and support in organizing the meeting and their free exchange of information.

PREFACE

In 1928, it was discovered that copper was essential for normal human metabolism. A decade later, in 1938, it was observed that patients with rheumatoid arthritis exhibited a higher than normal serum copper concentration that returned to normal with remission of this disease. Thirteen years later, it was found that copper complexes were effective in treating arthritic diseases. The first report that copper complexes had antiinflammatory activity in an animal model of inflammation appeared twenty-two years after the discovery of essentiality. In 1976, it was suggested that the active forms of the antiarthritic drugs are their copper complexes formed in vivo. This suggestion has been confirmed and extended in the interim in over 200 recent publications.

Individual biomedical scientists from many countries who have published in these areas recently saw a need for a meeting to exchange current research results and discuss the evidence supporting new hypotheses. We met on the University of Arkansas Medical Sciences campus in Little Rock, Arkansas, August 10–13, 1981. Participants came from Australia, England, France, Germany, Israel, Italy, The Netherlands, Norway, Poland, Scotland, Sweden, Switzerland, Wales, Zimbabwe, and over twenty of the United States.

The symposium was organized to present normal physiological and biochemical aspects of essential metal metabolism as well as the biological aspects of essential metal metabolism associated with inflammation, the pharmacologic activities of metal complexes, the therapeutic effectiveness of metal complexes in the treatment of arthritic diseases, and the alternative mechanisms of their activity. The always intriguing presentations and the stimulating, interactive discussions that followed are contained in these proceedings.

February, 1982 John R. J. Sorenson

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