

Inflammatory Diseases and Copper

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

Edited by

John R. J. Sorenson

University of Arkansas for Medical Sciences,
Little Rock, Arkansas

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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

PARTICIPANTS

- Aaseth, Jan, Institute of Occupational Health, Box 8149 - DEP, Oslo 1, Norway.
- Abdulla, Mohamed, Research Department 2, E. Block, 4th Floor, University Hospital, S-221 85 Lund, Sweden.
- Ahokas, Robert A., University of Tennessee, OB/GYN Department, 800 Madison Avenue, Memphis, TN 38163, U.S.A.
- Alley, Michael C., Rheumatology Research Laboratory, Mayo Medical School, Rochester, MN, U.S.A.
- Bailey, Jack S., The Arthritis Institute of the National Orthopedic and Rehabilitation Hospital, 2455 Army Navy Drive, Arlington, VA 22206, U.S.A.
- Ball, Frank J., 4 Atlantic Street, Charleston, SC 29401, U.S.A.
- Berglund, Torkel, Institute of Theoretical Physics, Vanadisvagen 9, S-11346 Stockholm, Sweden.
- Bonta, Ivan L., Chairman, Department of Pharmacology, Erasmus Universitet Rotterdam, P.O. Box 1738, Rotterdam, The Netherlands.
- Bressan, Mario, University of Padova, V. Marzolo 1, 35100 Padova, Italy.
- Brewer, George J., Department of Human Genetics and Internal Medicine, The University of Michigan Medical School, 1137 E. Catherine St., Ann Arbor, Michigan, 48109, U.S.A.
- Bronner, Felix, Department of Oral Biology, School of Dental Medicine, Connecticut Health Center, Farmington, Conn. 06032, U.S.A.
- Brown, Thomas McP., The Arthritis Institute of the National Orthopadic and Rehabilitation Hospital, 2455 Army Navy Drive, Arlington, VA 22206, U.S.A.
- Buettner, Gary R., Department of Chemistry, Wabash College, Crawfordville, Indiana 47933, U.S.A.
- Camakaris, Jim, Department of Genetics, University of Melbourne, Parkville, Victoria, 3052 Australia.
- Chan, Wai-Yee, Department of Pediatrics, University of Oklahoma, Oklahoma City, OK 73190, U.S.A.
- Chappuis, Philippe, Laboratoire de Biochimie Appliquee, University Rene Descartes, 4 Avenue de l'Obseratoire, F5005 Paris, France.
- Clark, Harold W., Department of Research, The Arthritic Institute of the National Orthopedic and Rehabilitation Hospital, 2455 Army Navy Drive, Arlington, VA 22206, U.S.A.
- Coffey, John W., Hoffmann-LaRoche, Inc., 340 Kingsland St., Nutley, NJ 07110, U.S.A.

PARTICIPANTS

- Collins, Henry, Department of Physical Sciences, Chicago State University, 95th & King Drive, Room D-309, Chicago, IL 60628, U.S.A.
- Cousins, Robert J., Department of Food Science and Human Nutrition, University of Florida, Gainesville, FL 32611, U.S.A.
- Covington, M. W., Copper Development Association, Inc., 405 Lexington Avenue, New York, NY 10174, U.S.A.
- Cypher, George A., International Copper Research Association, 708 Third Avenue, New York, NY 10017, U.S.A.
- Dameron, Charles T., Texas A&M University, Department of Biochemistry, College Station, TX 77843, U.S.A.
- Denko, Charles W., Scott Research Laboratory, Fairview General Hospital, 18101 Lorain Avenue, Cleveland, Ohio 44111, U.S.A.
- DiSilvestro, Robert A., Department of Biochemistry, Texas A&M University, College Station, TX 77843, U.S.A.
- Dollwet, Helmar H. A., Department of Biology, University of Akron, Akron 43225, Ohio, U.S.A.
- Elmes, Margaret, Department of Pathology, The Welsh National School of Medicine, Cardiff, Wales, CF4 4XN, U.K.
- Esnouf, M. Peter, Department of Clinical Biochemistry, University of Oxford, Radcliffe Infirmary, Oxford OX2 6HE, England, U.K.
- Evans, Gary W., Human Nutrition Laboratory, Agricultural Research Service, United States Department of Agriculture, Grand Forks, ND 58201, U.S.A.
- Flynn, Arthur, The Cleveland Clinic, Cleveland, Ohio 44106, U.S.A.
- Francis, Marion D., Proctor & Gamble Co., 2N 142, Miami Valley Labs, Cincinnati, Ohio 45247, U.S.A.
- Frieden, Earl, Department of Chemistry, The Florida State University, Tallahassee, Florida 32306, U.S.A.
- Gainey, A. I., University of Oxford, Radcliffe Infirmary, Oxford OX2 6HE, England, U.K.
- Ganther, Howard E., Department of Nutritional Sciences, University of Wisconsin, Madison, Wisconsin 53706, U.S.A.
- Gerber, Donald A., Downstate Medical Center, 450 Clarkson Ave., Brooklyn, New York 11203, U.S.A.
- Giroux, Eugene, Merrell-National Laboratories, 2110 E. Galbraith Road, Cincinnati, Ohio 45215, U.S.A.
- Graff, Tania, Department of Chemical Pathology, St. Mary's Wing, Whittington Hospital, Highgate Hill, London N19 5NP, England, U.K.

PARTICIPANTS

- Gubler, Clark J., Department of Biochemistry, Brigham Young University, Provo, Utah 84602, U.S.A.
- Hall, M. J., Roche Products Limited, P.O. Box 8, Welwyn Garden City, Hertfordshire AL7 3AY, England, U.K.
- Hangarter, Werner, Im Pfrimmenaker 2, D-7570 Baden-Baden (Neuweier), West Germany.
- Harris, Edward D., Department of Biochemistry and Biophysics, College of Agriculture, Texas A&M University, College Station, TX 77843, U.S.A.
- Hasty, Elvira F., Mundelein College, 6363 Sheridan, Chicago, IL 60660, U.S.A.
- Henry, Yann, Institut de Biologie Physico Chimique, 13 Rue Pierre et Marie Curie, F75005 Paris, France.
- Holt, Mary Elizabeth, Department of Rheumatology, University Hospital of Wales, Heath Park, Cardiff, Wales CF4 4XN, U.K.
- Hopper, John H., Kellogg Company, 235 Porter St., Battle Creek, Michigan 49016, U.S.A.
- House, Dennis, Baptist Medical Center, 1701 W. Park Drive, Little Rock, AR 72204, U.S.A.
- Keen, Carl L., Department of Nutrition, University of California, Davis, California 95616, U.S.A.
- Kishore, Vimal, Department of Biopharmaceutical Sciences, College of Pharmacy, University of Arkansas for Medical Sciences, Little Rock, AR 72205, U.S.A.
- Klevay, Leslie M., Human Nutrition Laboratory, Agricultural Research Center, United States Department of Agriculture, Grand Forks, ND 58201, U.S.A.
- Konijn, A. M., Department of Nutrition, The Hebrew University, Hadassah Medical School, P.O. B 1172, Jerusalem, Israel
- Laroche, Marie Jeanne, Laboratoire de Biochimie Appliquée, Université René Descartes, F5005 Paris, France.
- Lewis, Alan J., Wyeth Laboratories, P.O. Box 8299, Philadelphia, PA 19101, U.S.A.
- Lipsky, Peter E., Rheumatic Disease Unit, Department of Internal Medicine, The University of Texas Southwestern Medical School, 5323 Harry Hines Blvd., Dallas, TX 75235, U.S.A.
- Litov, Richard E., Mead Johnson, Nutritional Division, Evansville, Indiana 47721, U.S.A.
- Ludwig, Janet C., Department of Surgical Biology, College of Medicine, The University of Arizona Health Science Center, Tucson, AZ 85724, U.S.A.

PARTICIPANTS

- Lunec, Joseph, Chemical Pathology Department, St. Mary's Wing, Whittington Hospital, Highgate Hill, London, N19 5NP England, U.K.
- Madrid, Felix, Chief, Division of Rheumatology and Clinical Immunology, Department of Medicine, Wayne State University, Detroit, Michigan 48202, U.S.A.
- McCall, John T., Mayo Clinic, 200 First Ave., S.W. Rochester, MN 55901, U.S.A.
- McCord, Joseph M., Department of Biochemistry, College of Medicine, University of South Alabama, Mobil, Alabama 36688, U.S.A.
- Mertz, Walter, Nutrition Institute, Agricultural Research Service, Beltsville, MD 20705, U.S.A.
- Moore, Charles, International Copper Research Association, 708 Third Avenue, New York, NY 10017, U.S.A.
- Mylroie, Augusta A., Department of Physical Sciences, Chicago State University, 95th at King Drive, Room D-309, Chicago, IL 60628, U.S.A.
- Niedermeier, William, Division of Clinical Immunology and Rheumatology, University of Alabama, Birmingham, Alabama 35294, U.S.A.
- Nufert, Thomas H., Consultant-Nutritional Biochemistry, 2721 Sheffield Place, Castro Valley, CA 94546, U.S.A.
- Oberley, Larry W., Radiation Research Laboratories, The University of Iowa, Iowa City, Iowa 52242, U.S.A.
- O'Dell, Boyd L., Department of Biochemistry, College of Agriculture and School of Medicine, University of Missouri, Columbia, MO 65201, U.S.A.
- Powanda, Michael C., Chief, Biochemistry Branch, United States Army Institute of Surgical Research, Fort Sam Houston, San Antonio, TX 78234, U.S.A.
- Prohaska, Joseph R., University of Minnesota-Duluth, Duluth, MN 55812, U.S.A.
- Rainsford, Kim D., University of Zimbabwe, P.O. Box 167, Mount Pleasant, Salisbury, Zimbabwe
- Ross, Seasley, 371 Maryhurst Drive, Dayton, Ohio 45459, U.S.A.
- Shaw III, C. Frank, Department of Chemistry, The University of Wisconsin-Milwaukee, Milwaukee, Wisconsin 53201, U.S.A.
- Sherlock, Margaret, Schering Corporation, 60 Orange Street, Bloomfield, NJ 07003, U.S.A.
- Simkin, Peter A., Division of Rheumatology, University of Washington, Seattle, WA 98195, U.S.A.
- Smith, Gaylord D., Inco Research and Development Center, Inc., Sterling Forest, Suffern, NY 10901, U.S.A.

PARTICIPANTS

- Smith, Herman W., The Upjohn Company, 7244-25-3, Kalamazoo, MI 49001, U.S.A.
- Smith, W. Ewen, Strathclyde University, Department of Pure and Applied Chemistry, Glasgow G1 1XL, Scotland, U.K.
- Sorenson, John R.J., Department of Biopharmaceutical Sciences, College of Pharmacy and Department of Pharmacology, College of Medicine, University of Arkansas for Medical Sciences, Little Rock, AR 72205, U.S.A.
- Sternlieb, Irmin, Albert Einstein College of Medicine, Division of Genetic Medicine, Department of Medicine, Bronx, NY 10461, U.S.A.
- Stevens, Michael D., Texas A&M University, Department of Biochemistry, College Station, TX 77843, U.S.A.
- Straub, Karl David, V. A. Medical Center, 300 E. Roosevelt Road, Little Rock, AR 72206, U.S.A.
- Tasker, Paul R. S., Manchester Royal Infirmary, 157 Worsley Road, Worsley, Manchester, M28 4SJ Lancs, England, U.K.
- Tiemeyer, Teresa, Department of Pathology, University of Arkansas for Medical Sciences, 4301 W. Markham, Little Rock, AR 72205, U.S.A.
- Tikusis, Stan R., 18426 S. Halsted Street, Glenwood, IL 60425, U.S.A.
- van der Goot, Henderikus, Department of Medicinal Chemistry, Vrije Universiteit, Amsterdam, The Netherlands.
- van Hardenbroek, M., Summit Country Clinic, P.O. Box 298, Dillion, CO 80435, U.S.A.
- Velo, Giampaola, Istituto Di Farmacologia, Universita Degli Studi Di Padova, Sede Distaccata in Verona, 37100 Verona, Italy.
- Walker, W. Ray, Department of Chemistry, The University of Newcastle, New South Wales 2308, Australia.
- Weser, Ulrich, Physiologisch-Chemisches Institut, Universitaet Tubingen, D-7400 Tubingen, Federal Republic of Germany.
- West, Geoffrey B., Department of Paramedical Sciences, North East London Polytechnic, London E15 4LZ, England, U.K.
- Williams, David R., Department of Chemistry, University of Wales Institute of Science & Technology, Cardiff CF1 3NU, Wales, U.K.
- Williams, Darryl M., Chief, Section of Hematology/Oncology, School of Medicine, Louisiana State University Medical Center, P.O. Box 33932, Shreveport, Louisiana 71130, U.S.A.

PARTICIPANTS

Winterhalter, K. H., Swiss Federal Institute of Technology,
8000 Zurich, Switzerland.

Wolf, Bernd, Gruenthal GmbH, Sleinfeldstrasse 2, 5190
Stolberg, Federal Republic of Germany.

Wong, Les, Shaklee Corporation, 1992 Alpine Way, Hayward,
CA 94545, U.S.A.

Youssef, Amit A. R., Royal Free Hospital, Department of
Rheumatology, Hampstead, London NW3 2QG, England, U.K.

Zgirski, Alojzy F., Department of Biochemistry, University
of Lodz, Lodz, Poland.

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