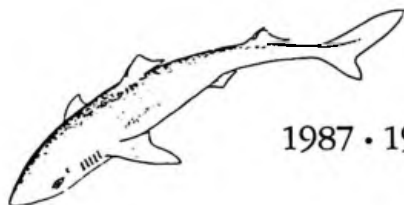


THE BULLETIN

Mount Desert Island
Biological Laboratory
Salsbury Cove
Maine 04672

Volume 27



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* * N O T I C E * *

Previous volumes of The Bulletin have always been dated according to the year research was conducted rather than the following year when it actually was published and distributed. This has sometimes led to confusion on the part of researchers and institutional libraries. Therefore, the Executive Committee decided that all future volumes shall be dated according to the year of publication. To cover this transition, Volume 27 has been dated 1987 - 1988.

The Editorial Staff

I N T R O D U C T I O N

The Mount Desert Island Biological Laboratory is an independent non-profit biological station. It is located on the north shore of Mount Desert Island, which lies in the Gulf of Maine about 120 miles northeast of Portland near the mouth of the Bay of Fundy. The island, well known for its Acadia National Park, provides a variety of habitats including shallow and deep saltwater, a broad intertidal zone, saltwater and freshwater marshes, freshwater lakes and streams, forests and meadows.

The Laboratory is the largest cold water research facility in the Eastern United States, and its unique site provides an outstanding environment for studying the physiology of marine and freshwater fauna. During 1987 the scientific personnel included 56 principal investigators, 20 associates and 66 assistants/technicians, representing 50 institutions from 25 states and 3 from West Germany.

In 1985 the Laboratory established a toxicology research center under the Marine and Freshwater Biomedical Sciences Specialized Center of Research Program (MFBS SCOR) sponsored by the National Institute of Environmental Health Sciences. Studies at the Center focus on the toxic effects of heavy metals and other environmental contaminants on membrane transport systems. During the summer of 1987 24 principal investigators and 7 of their associates worked on this research as well as their own research programs.

A C K N O W L E D G M E N T S

The Mount Desert Island Biological Laboratory is indebted to the National Science Foundation and National Institutes of Health for substantial support. Funds for renovations and new construction have permitted the Laboratory to expand and upgrade its facilities, and contributions to operating costs have greatly improved the efficiency of research activities. The individual research projects which have been served by the Laboratory are variously funded by private and government agencies, and all of these projects have benefited from the NSF and NIH grants to the Laboratory.

We also are indebted to the Lucille Markey Charitable Trust for its support of scientific instrumentation and research fellowships for young investigators.

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1 9 8 7 S E M I N A R S

Morning Transport

- July 6 "Chloride Transport in the Collecting Duct." John B. Stokes III, M.D.,
University of Iowa Hospitals
- July 13 "The Diluting Segment of the Shark Kidney." Steven C. Hebert, M.D.,
Brigham & Women's Hospital
- July 20 "Cardiac Peptides and Salt Transport." Patricio Silva, M.D., Beth
Israel Hospital and Harvard Medical School
- July 27 "Chloride Transport and Membrane Proteins." Jose A. Zadunaisky, M.D.,
Ph.D., New York University Medical Center
- Aug. 3 "Proton ATPases in the Kidney." Evamaria Kinne-Saffran, M.D., Max-
Planck-Institut fuer Systemphysiologie
- Aug. 10 "Transporting Epithelia in Culture - Problems and Questions." John D.
Valentich, Ph.D., University of Texas Medical School at Houston
- Aug. 17 "The Na-K-2Cl Co-transporter." Bliss Forbush III, Ph.D., Yale
University School of Medicine
- Aug. 24 "Adenosine Inhibition: Mode of Action." John N. Forrest, Jr., M.D.,
Yale University School of Medicine

Noon

- July 3 "Xanthine Dehydrogenase Activity in Intertidal Invertebrates: A
Paradigm for Ischemia-Reperfusion Tissue Injury." James A. Dykens,
Ph.D., Grinnell College
- "Possible Role of Cytoskeleton in Cell Volume Regulation." John W.
Mills, Ph.D., Dartmouth Medical School
- July 9 "Poikilothermic Temperature Acclimation as a System for Study of
Biomembrane-Associated Detoxication Processes." Lawrence R. Curtis,
Ph.D., Oregon State University
- "Acetylcholine: Rat Hearts and Fish Tails." Oliver M. Brown, Ph.D.,
State University of New York Health Science Center at Syracuse
- July 17 "A Transport Function for a Ca Binding Protein in Intestine and
Kidney." Felix Bronner, Ph.D., University of Connecticut Health Center
- July 24 "Polar Lobe Function in Equalized Ilyanassa obsoleta Embryos." JoAnn
Render, Ph.D., Hamilton College
- "Neoplasia in Bivalves and Marine Fishes." Paul Reno, Ph.D.,
University of Maine
- July 31 "Cell Physiology of Shark Rectal Gland Epithelial Cells." John D.
Valentich, Ph.D., University of Texas Medical School at Houston

- July 31 "Physiological Divergence Across the Isthmus of Panama." Joan D. Ferraris, Ph.D., Mount Desert Island Biological Laboratory
- Aug. 7 "Glycosylation and Sulfation in Marine Invertebrates." Margaret O. James, Ph.D., University of Florida
- "Hepatotoxicity and Induction: Interaction in Fish." Kevin Kleinow, D.V.M., Ph.D., Medical College of Wisconsin
- Aug. 14 "Glia, the Neglected Brain Cells: Physiology and Possible Functions." Eric A. Newman, Ph.D., Eye Research Institute, Boston
- "Bioavailability and In vivo Metabolism of Aromatic Hydrocarbons." Anne E. McElroy, Ph.D., University of Massachusetts-Boston
- Aug. 21 "Effects of Plasma K and Catecholamines on Renal Function in Non-Mammalian Vertebrates." Siribhinya Benyajati, Ph.D., University of Oklahoma Health Science Center and Stanley D. Yokota, Ph.D., West Virginia University
- "Waxes (Nontriglycerides) as a Nutrient Source." Allen R. Place, Ph.D. University of Pennsylvania

Evening

- July 15 "Studies on Isolated Renal Cells Do Elucidate Transport Mechanisms." Rolf Kinne, M.D., Ph.D., Max-Planck-Institut fuer Systemphysiologie
- July 22 "Oh Calcium!" Howard Rasmussen, M.D., Ph.D., Yale University School of Medicine
- July 29 "Mercury - of Molecules, Mice and Men." Thomas W. Clarkson, Ph.D., University of Rochester Medical Center
- Aug. 5 "The AIDS Epidemic: Past, Present and Future." Richard Garibaldi, M.D., University of Connecticut School of Medicine
- Aug. 12 "Identification of Isoforms of Na-K-ATPase by Molecular Cloning." Edward J. Benz, Jr., M.D., Ph.D., Yale University School of Medicine

Special Seminars

- July 8 THE SIXTH WILLIAM B. KINTER MEMORIAL LECTURESHIP
"Intestinal Absorption of Heavy Metals and Its Control." Ernest C. Foulkes, D.Phil., College of Medicine, University of Cincinnati
- July 10 "The Problem of Osteoporosis: Breaking Bones and Bending Back and What We Can Do About Them." Lawrence G. Raisz, M.D., University of Connecticut Health Center
- Aug. 20 "Aging Reconsidered." John W. Rowe, M.D., Beth Israel Hospital and Harvard Medical School

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A B S T R A C T T I T L E S

George W. Booz, Fuad N. Ziyadeh, George M. Feldman and Arnost Kleinzeller. The binding sites involved in p-chloromercuribenzenesulfonate (PCMBs) induced swelling of dogfish (<u>Squalus acanthias</u>) rectal gland cells.....	1
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