THE BULLETIN

Mount Desert Island
Biological Laboratory
Salsbury Cove
Maine 04672

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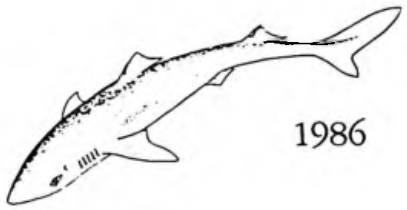

TABLE OF CONTENTS

History & Organization i
Facilities ii
Applications & Fellowships iv
Trustees v
Officers vi
Scientific Personnel vii
Seminars xiii
1985 Publications xvi
Abstract Titles xviii
Research Reports 1
Author Index 184
Species Index 186
Subject Index 187

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 and complement of year-round and summer investigators provide an outstanding environment for the study of various aspects of the physiology of marine and freshwater fauna. During 1986 the scientific personnel included 54 principal investigators, 24 associates, and 77 assistants/technicians, representing 40 institutions in 26 states and 2 foreign countries.

HISTORY AND ORGANIZATION

The Mount Desert Island Biological Laboratory was founded in 1898 at South Harpswell, Maine by J.S. Kingsley of Tufts University. Its present site at Salsbury Cove was donated by the Wild Gardens of Acadia. Relocation was completed in 1921. The Wild Gardens of Acadia was a land-holding group headed by George B. Dorr and John D. Rockefeller, Jr. which was instrumental in the founding of Acadia National Park.

The Laboratory was incorporated in 1914 under the laws of the State of Maine as a non-profit scientific and educational institution. Its original purpose was to teach undergraduate marine biology; however, the direction soon changed to providing a facility for marine research. Since the pioneering work of H.K. Smith, E.K. Marshall, and Roy P. Forster on various aspects of renal and osmoregulatory physiology of local fauna, the Laboratory has become known worldwide as a center for investigations in electrolyte and transport physiology, developmental biology and electrophysiology.

The Mount Desert Island Biological Laboratory is owned and operated by the Board of Trustees and Members of the Corporation; at present there are over 400 members. Officers of the Corporation - President, Vice-President, Director, Secretary, Treasurer - and an Executive Committee are elected from among the trustees. The President and Executive Committee oversee the general administration and goals of the Laboratory. The Director, with the aid of a full-time Administrative Director and small staff, handles the daily operations.

NIEHS Toxicology Center

The MDIBL has recently 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. Inquiries into Center activities are welcome.

FACILITIES

The Laboratory now owns about 250 acres. In addition to rocky shores, the site contains a freshwater pond and brook and land which varies from meadow and forest to sphagnum bog. This provides a great diversity of fauna. The Administrative Director can provide an estimate of the availability of any particular species.

Laboratories

All laboratories are single-story buildings of frame construction located along the shore.

Halsey Laboratory consists of 4 laboratories on a concrete slab. Flowing seawater is available in the labs or on an adjoining roofed deck. Summer use only.

Hegner Laboratory contains 8 laboratories of varying size on a concrete slab. Although not winterized, all laboratories are insulated in order to accommodate investigators requiring controlled temperature and humidity for their experiments. The labs have running seawater as well as access to aquaria and other holding tanks adjacent to the building.

The Instrument Shed is a small building containing one laboratory and a common room for general equipment and a water still. Summer use only.

Karnofsky Laboratory is a year-round research building. It contains 4 large laboratories and an office set on a concrete slab. Flowing seawater is accessible on an attached, enclosed deck.

The Kidney Shed is a single large laboratory which can accommodate two compatible research groups. It is equipped with saltwater both in the lab and on an adjacent deck. Summer use only.

Lewis Laboratory contains 2 insulated laboratories on a concrete slab. Seawater tables are on an adjoining roofed deck. Summer use only.

Marshall Laboratory, a year-round facility, houses 5 laboratories, an office, and a common-use tissue culture lab. Flowing seawater is available on an enclosed deck and in a central holding facility located in the basement.

Neal Laboratory contains 4 large and 4 small laboratories. Flowing seawater is available in all labs as well as at tables attached to the outside of the building. Summer use only.

Union Station has 2 laboratories on a concrete slab. Flowing seawater is available in the labs and on an adjoining roofed deck. Summer use only.

Study Space

Three small buildings away from the center of activity are available during the summer for study and writing.

Other Buildings

The Office and biophysics wing are in a centrally located year-round structure. A conference room and reference library are housed on the lower level.

The Maintenance Shop is a year-round structure located near the laboratory complex.

The Director's Office contains a small summer office and a research laboratory.

Dahlgren Hall, the former village schoolhouse, has been converted into a lecture hall which can seat 120 people. Seminars and other meetings are held here during the summer.

Support Facilities

1. Equipment for general use includes micro-, high-speed and ultra-centrifuges, balances, pH meters, spectrophotometers, flame photometers, gamma and scintillation counters, and osmometers. There also are tissue culture facilities which include incubators, hoods, and an inverted microscope.

2. Year-round seawater system and 2 centralized holding facilities.

3. A dock consisting of 2 floats with live-wells and attached live-cars for maintaining specimens.

4. Two power boats - 22' and 16' - and rowing skiffs are available for specimen collecting.

Housing **

Seventeen cottages are maintained by the Laboratory as rental units for summer investigators and their families. Two efficiency apartments are also rental units on a year-round basis. Privately owned cottages and rooms are available near the Laboratory or in neighboring communities.

Four summer cottages have been converted into dormitories for 40 young men and women.

A Dining Hall, run by a cook/manager, is the eating and socializing area for the dormitory residents. It is also used for informal seminars and receptions.

** [Salsbury Cove is a small community with a post office and a general store; therefore an automobile is essential for family mobility. Bar Harbor, 6 miles away, and Ellsworth, 12 miles north on the mainland, offer excellent shopping facilities and hospitals.]

APPLICATIONS & FELLOWSHIPS

Research space is available for the entire summer season (June 1 - September 30) or a half-season (June 1 - July 31 or August 1 - September 30). Applications for the coming summer must be submitted by January 31 of each year. Investigators are invited to use the year-round facilities at other times of the year, but such plans should include prior consultation with the MDIBL Office concerning available facilities and specimen supply.

A limited number of fellowships and scholarships are available to research scientists and students. These funds may be used to cover the cost of laboratory rent, housing and supplies. Applications for fellowships are generally due in December of the year preceeding the summer research period.

For further information on applications and financial aid, contact:

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ACKNOWLEDGMENTS

The Mount Desert Island Biological Laboratory is indebted to the National Science Foundation and National Institutes of Health for substantial support. Funds for renovations of buildings 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 are also indebted to the Lucille Markey Charitable Trust for their support of scientific instrumentation and research fellowships for young investigators.

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New York University Medical Center

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1986 TUESDAY EVENING SEMINAR SERIES
8:00 P.M., Dahlgren Hall

June 24	John Pritchard, Ph.D. NIEHS P.O. Box 12233 Research Triangle Park, NC 27709	Kinter Memorial Lecture "Comparative Model in Environmental Pharmacology: A Legacy from Bill Kinter" (Host: David Evans)
July 1	Raymond Rappaport, Ph.D. Professor of Biology Union College Schenectady, NY 12308	"Origin of the Cell Division Mechanism" (Host: Hank Edelhauser)
July 8	Irvin Levitan, Ph.D. Department of Biochemistry Brandeis University Waltham, MA 02154	"Regulations of Ion Channels by Intracellular Messengers" (Host: Ray Frizzell)
July 15	Kevin M. Kleinow, D.V.M., Ph.D. Professor of Pharmacology and Toxicology Medical College of Wisconsin 8701 Watertown Plank Road Milwaukee, WI 53226	"Biotransformation and Persistance of Chemicals in Fish" (Host: Hank Edelhauser)
July 22	Kenneth Spring, Ph.D. Staff Physiologist Kidney & Electrolyte Laboratory National Heart and Blood Institute Building 10, Room 6N310 Bethesda, MD 20205	"Control of Epithelial Cell Volume" (Host: Hank Edelhauser)
July 29	Andrew Bass, Ph.D. Section of Neurobiology and Behavior Cornell University, Mudd Hall Ithaca, NY 14853	"Evolution of Steroid Sensitive Communication Pathways in Fishes" (Host: Ian P. Callard)
August 6 (Wednesday)	Claude P. Lechene, M.D. Professor of Physiology and Biophysics Harvard Medical School 221 Longwood Avenue Boston, MA 02115	"Transport Characteristics of Proximal Tubule Cells in Short-Term Culture" (Host: Patricio Silva)
August 12	David Idler, Ph.D. Marine Science Research Lab Memorial University St. Johns, Newfoundland Canada A1C 5S7	"Pituitary Gonadaotropins and the Regulation of Teleost Reproduction" (Host: Ian P. Callard)
August 19	Robin Wallace, Ph.D. Whitney Laboratory St. Augustine, FL 32086	"Oocyte Growth in Non-mammalian Vertebrates" (Host: Ian P. Callard)

1986 SEMINARS

Morning Transport

July 8 "Chloride Transport in Cystic Fibrosis." Raymond Frizzell, Ph.D., University of Alabama in Birmingham

July 14 "Single Channel Consciousness and the Language of Transport." David C. Dawson, Ph.D., University of Michigan Medical School

July 21 "Influence of pH on Cation Channels in Cell Membranes." Martin Morad, Ph.D., University of Pennsylvania

July 28 "Potassium Transport in Mammalian Distal Colon." Gerhard Rechkemmer, Ph.D., University of Hannover

Aug. 4 "Relationship Between the Maintenance and Regulation of Cell Volume and the Cytoplasmic Gel." Claude Lechene, M.D., Harvard Medical School

Aug. 11 "Role of Adenosine in Epithelial Transport." John N. Forrest, Jr., M.D., Yale University School of Medicine

Aug. 18 "Regulation of Intracellular pH in Cultured Epithelial Cells." Thomas Jentsch, Ph.D., Freie University, Berlin

Aug. 25 "Chloride Transport Across Amphibian Skin." Kenneth Spring, Ph.D., National Institutes of Health

Noon

July 3 "The Bigger and Better MDIBL." David L. Wynes, Ph.D., Mount Desert Island Biological Laboratory

July 10 "Organic Anion Ion Transport Systems in Liver Plasma Membranes." Gerhart Fricker, Ph.D. and Gabriel Hugentobler, Ph.D., University Hospital of Zurich

July 17 "Electro-chromic Dyes in Transporting Tissues." James Blankemeyer, Ph.D., Oklahoma State University

July 24 "Neurotransmitter Action in the Skate Retina." Joel L. Cohen, Ph.D., Wright State University

"Epithelial Cultures: How to Drive Yourself Insane." Kurt Amsler, Ph.D., Max-Planck-Institut fuer Systemphysiologie

July 31 "Hepatic Glutathione Metabolism and Transport." Ned Ballatori, Ph.D., Yale University School of Medicine

"Transport Processes of the Inner Ear of Dogfish." Jeffrey Garvin, Ph.D., Laboratory of Kidney & Electrolyte Metabolism, NIH

Aug. 14 "How Do Sodium-Absorbing Epithelial Cells Do Their Jobs and Survive?"

Stanley G. Schultz, Ph.D., The University of Texas Health Science Center at Houston

Aug. 20 "New Perspectives on the Liver as a Growth Regulating Organ." Charles S. Nicoll, Ph.D., University of California at Berkeley

Evening

July 1 "Origin of the Cell Division Mechanism." Raymond Rappaport, Ph.D., Union College

July 8 "Regulations of Ion Channels by Intracellular Messengers." Irvin Levitan, Ph.D., Brandeis University

July 15 "Biotransformation and Persistance of Chemicals in Fish." Kevin M. Kleinow, D.V.M., Ph.D., The Medical College of Wisconsin and The Center for Great Lakes Studies, Milwaukee

July 22 "Control of Epithelial Cell Volume." Kenneth Spring, Ph.D., National Heart and Blood Institute, NIH

July 29 "Evolution of Steroid Sensitive Communication Pathways in Fishes." Andrew Bass, Ph.D., Cornell University

Aug. 6 "Transport Characteristics of Proximal Tubule Cells in Short-Term Culture." Claude P. Lechene, M.D., Harvard Medical School

Aug. 12 "Pituitary Gonadaotropins and the Regulation of Teleost Reproduction." David Idler, Ph.D., Memorial University, St. Johns, Newfoundland

Aug. 19 "Oocyte Growth in Non-Mammalian Vertebrates." Robin Wallace, Ph.D., Whitney Laboratory, University of Florida

Special Seminars

June 24 THE FIFTH WILLIAM B. KINTER MEMORIAL LECTURESHIP
"Comparative Model in Environmental Pharmacology: A Legacy from Bill Kinter." John B. Pritchard, Ph.D., National Institute of Environmental Health Sciences

July 10 "Health Care and Aging: What Can We Do For Ourselves?" Alexander Leaf, M.D., Harvard Medical School

1986 PUBLICATIONS

Ballatori, N. and J.L. Boyer. Slow biliary elimination of methylmercury in the marine elasmobranchs, Raja erinacea and Squalus acanthias. Toxicol. Appl. 85:407-415. 1986

Conrad, G.W. and P.E. Vernon. Effects of local anesthetics on cytokinesis and polar lobe formation in fertilized eggs of Ilyanassa obsoleta. Intl. J. Invert. reprod. Devel. 9:195-207.

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Hentschel, H. M. Elger, B. Schmidt-Nielsen. Chemical and morphological differences in the kidney zones of the elasmobranch, Raja erinacea. Mitch., Comp. Biochem. Physiol. 84 A, 553-557, 1986.

Kinne-Saffran, E. and H. Schuetz, B. Schoelermann, D. Girard and R. Kinne. Effect of cadmium on epithelial transport systems in Pseudopleuronectes americanus. Studies with isolated plasma membrane vesicles, 1986.

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Preston, R.L. Occurence of D-amino acids in higher organisms: A survey of the distribution of D-amino acids in marine invertebrates. Comp. Biochem. Physiol. In press.

Preston, R.L. D-Alanine transport and metabolism by the coelomocytes of the bloodworm, Glycera dibranchiata (Polycheata). Comp. Biochem. Physiol. In press.

Rappaport, R. Simple methods and devices for handling echinoderm eggs. In: Methods in Cell Biology, 27. T.E. Schroeder, ed. Academic Press, Inc., pp. 345-358.

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Swenson, E.R. and T.H. Maren. Dissociation of CO_2 Hydration and Renal Acid Secretion in the Dogfish, S. Acanthias. Am. J. Physiol. 250:F288-F293, 1986.

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Yee, R.W. and H.F. Edelhauser. Specular microscopy of vertebrate cornea: A comparative study. Exp. Eye Res. In press.

This list was compiled according to the information requested and received by the Bulletin Editor.

ABSTRACT TITLES

Venglarik, Charles J. and David C. Dawson. Blockade of apical K channels in flounder (Pseudopleuronectes americanus) urinary bladder by inorganic mercury: time dependence due to apparent inactivation of Hg^{++}.....1

Swenson, E.R. and J.B. Claiborne. Carbonic anhydrase inhibition does not alter the rate of recovery from metabolic acidosis in the spiny dogfish, Squalus acanthias.....5

Silva, Patricio, et al. Effect of bis-tributyltin oxide on the rectal gland of Squalus acanthias.....7

Solomon, R., G. Solomon, A. Landsberg and F.H. Epstein. Effect of atrial natriuretic peptide in Lophius americanus: a preliminary report.....9

Ferraris, Joan D., Bodil Schmidt-Nielsen and Hilda K. Roderick. AVP-sensitive intracellular solute regulation in renal papillary collecting tubule cells in Rattus norvegicus.....12

Mills, John W., Elise Saks and Arnost Kleinzeller. Distribution of F-actin in the tubular cells of the dogfish (Squalus acanthias) rectal gland.....13

Kinne-Saffran, E., et al. Effect of cadmium on epithelial transport systems in Squalus acanthias: studies with isolated plasma membrane vesicles.....15

Kinne-Saffran, E., et al. Effect of cadmium on epithelial transport systems in Pseudopleuronectes americanus: studies with isolated plasma membrane vesicles.....18

Papenfuss, Rita and Hilmar Stolte, et al. Renal handling of amino acids in Myxine glutinosa (Cyclostomata).....21

Epstein, Franklin H. and Patricio Silva. Rat hypothalamic growth hormone releasing factor (rhGRF) stimulates rectal gland secretion in Squalus acanthias.....23

Elger, Bernd and Hilmar Stolte, et al. Effect of cadmium and mercury on lysosomal acid phosphatase activity in the kidney of Myxine glutinosa.....25

Dukes, Iain D., Lars Cleeman and Martin Morad. Analysis of the transient outward current (I_{to}) in single dialysed rat ventricular cells.....27

Cleeman, Lars, Scott Lamp and Martin Morad. Optical measurements of intracellular Ca-transients in voltage clamped myocardial cells.....30

Cleeman, Lars, et al. Effects of estradiol on membrane properties of cultured goldfish (Carassius auratus) neurons.....33

ABSTRACT TITLES

Solomon, R., et al. The effect of organotin on the isolated perfused rectal gland of Squalus acanthias preliminary studies.....37

Cuevas, Maria Elena and Gloria Callard. Characterization and stage-dependent distribution of an estrogen sulfotransferasein the testis of the dogfish Squalus acanthias.....40

Kidder, Geoge W. and Elizabeth L. Kidder. Carbon monoxide insensitivity of the gastric mucosa of Raja erinacea.....43

Heath, Ashley R. and Heather M. Hindman. Studies on the control of tapetal pigment granule migration in the spiny dogfish, Squalus acanthias.....47

Weiss, James, Eva Runnman, and Martin Morad. Hydrogen peroxide activates a large outward K^+ current in isolated ventricular myocytes from Cavia cobaya (guinea pig) and Mus rattus(rat).....51

Kangas, T.A. and H.F. Edelhauser. Release of radiolabeled glycosaminoglycans by the nonswelling cornea of the dogfish shark (Squalus acanthias) and the swelling cornea of the alewife (Alosa pseudoharengus) and sculpin (Myoxocephalus octodecimspinosus).....53

Hebert, Steven C. and Peter A. Friedman. Comparison of lead and barium effects on electrophysiologic properties of the in vitro perfused diluting segment from the peritubular sheath of Squalus acanthias kidney.....57

Hebert, Steven C. and Peter A. Friedman. Further evaluation of NaCl transport in the in vitro perfused diluting segment from the peritubular sheath of Squalus acanthias kidney.....61

Charney, Alan N., et al. Effect of HCO_3 and bumetanide on pH-sensitive intestinal chloride absorption in the flounder (Pseudopleuronectes americanus).....64

Blankemeyer, James T. and George W. Kidder III. Electrochromic dyes for visualization and assessment of intracellular potential in the gastric mucosa of Raja erinacea.....67

Place, Allen R., Nina Stoyan and Robert Ricklefs. Transient steatorrhea may be responsible for pre-fledgling weight loss in chicks of Leach's storm-petrel, Oceanodroma leucorhoa.....70

Place, Allen R., Nina Stoyan and Robert Ricklefs. The physiological basis of stomach oil formation in Leach's storm-petrel, Oceanodroma leucorhoa.....73

Garvin, J.L., K.R. Spring and P.A. Santi. Site and mechanism of endolymph production in Squalus acanthias.....77

ABSTRACT TITLES

Place, Allen R. and Ronald G. Butler. The importance of bile salts to wax ester assimilation in Leach's storm-petrel, Oceanodroma leucorhoa.....79

Andreoni, Kenneth A., Grant G. Kelley and John N. Forrest, Jr. Phosphodiesterase activity in the rectal gland of Squalus acanthias.....84

Yokota, Stanley D. and Siribhinya Benyajati. Regulation of glomerular filtration rate in a marine elasmobranch, the dogfish (Squalus acanthias).....87

Valentich, John D. Cell physiology of cultured Squalus acanthias rectal gland epithelium.....91

Valentich, John D. Organ culture of isolated Squalus acanthias rectal gland tubules.....95

Chauncey, Beth, Elizabeth C. Schmid and Leon Goldstein. Heavy metal effects on the flounder (Pseudopleuronectes americanus) intestine.....98

Conrad, Gary W. and Roberto R. Patron. Regulation of cellular shape change in fertilized eggs of Ilyanassa obsoleta.....101

Wondergem, Robert and Robert L. Preston. Transmembrane potential of Glycera dibranchiata red blood cells.....103

Wondergem, Robert and Kurt Amsler. Transmembrane potentials of cultured rectal gland cells of Raja erinacea.....105

Wondergem, Robert and James L. Boyer. Rheogenic L-alanine transport in cultured hepatocytes of the little skate (Raja erinacea).....108

Koob, T.J. and D.L. Cos. Studies on skate (Raja erinacea) egg capsule formation II. Introduction of catechols occurs in utero.....109

Koob, T.J. and D.L. Cox. Effects of salinity, pH and urea on shell gland catechol oxidase of Raja erinacea.....113

Claiborne, J.B. and David H. Evans. Acid-base responses and ammonia transfers during exposure to elevated ambient ammonia in a marine teleost (Myoxocephalus octodecimspinosus).....117

Klosterman, Lorrie L. and Ian P. Callard. Progesterone production by enzymatically dispersed cells from corpora lutea of the spiny dogfish, Squalus acanthias.....119

Leite, Margarette V. and Leon Goldstein. Effects of CA^{++} ionophore and phorbol ester on taurine efflux from skate (Raja erinacea) erythrocytes.....122

ABSTRACT TITLES

Shetlar, Robert E. and David W. Towle. Sodium/proton exchange in membrane vesicles from crab (Carcinus maenas and Callinectes sapidus) gill.....125

Preston, Robert L. and Chang Wen Chen. Effect of heavy metals on taurine transport by the coelomocytes of the marine polychaete, Glycera dibranchiata.....129

Sorbera, Lisa A., Christian Schwabe and Ian P. Callard. The effect of homologous relaxin and neurointermediate lobe extracts on in vivo and in vitro myometrial activity in the viviparous dogfish, Squalus acanthias.....133

Evans, David H., Andrew W. Evans and Karl E. Weingarten. The roles of transcellular transport steps in ammonia extrusion by the gill epithelium of the shark, Squalus acanthias.....136

Evans, David H., Andrew W. Evans and Karl Weingarten. The effects of cadmium on hemodynamics and transport of ammonia across the gill of the spiny dogfish, Squalus acanthias.....139

Kormanik, Gregg A. and William Kremer. Effect of acetazolamide on the establishment of uterine sea water conditions in pregnant dogfish (Squalus acanthias).....142

Maren, Thomas H. Renal bicarbonate reabsorption in marine fish, represented by Squalus acanthias, is based on H^+ secretion independent of CO_2.....145

Nicholson, C. and M.E. Rice. Calcium diffusion in the cerebellum of the skate (Raja erinacea).....149

Jaeger, C.B. and C. Nicholson. Distribution of monoaminergic neurons in the brainstem of the little skate, Raja erinacea.....151

Scheide, J.I. and J.A. Zadunaisky. Effect of copper and zinc on the isolated opercular epithelium of Fundulus heteroclitus.....153

Silbernagl, Stefan, Erik R. Swenson and Thomas H. Maren. Proximal tubular acidification in the isolated perfused kidney of the little skate, Raja erinacea.....156

Zadunaisky, Jose A., Charles Reing and John I. Scheide. The effect of copper and zinc on the isolated cornea of the bullfrog, Rana catesbiana.....159

Kleinzeller, Arnost, et al. Effects of p-chloromercuribenzene sulfonate (PCMBS) on the volume maintenance of dogfish (Squalus acanthias) rectal gland cells.....163

Cohen, Joel L. The action of gaba and serotonin on the response properties of retinal horizontal cells of the skate Raja oscellata.....165

ABSTRACT TITLES

MacGregor, L.C. and A. Kleinzeller. Osmolyte function of myo-inositol in dogfish (Squalus acanthias) rectal gland.....168

Lowenstein, J. and J. Zadunaisky. Prostaglandin production by the kidney of the goldfish (Carassius auratus).....169

Fricker, G. and J. Boyer, et al. identification of an organic anion transport protein in sinusoidal plasma membranes of hepatocytes of the little skate (Raja erinacea) by photoaffinity labeling and kinetic studies.....173

Kelley, Grant G., Harold Barron and John N. Forrest, Jr. Mechanism of signal transduction of inhibitory A1 adenosine receptors in the rectal gland of the shark, Squalus acanthias.....177

Dukes, Iain D. and Martin Morad, et al. Fusion of isolated cardiac ventricular cells from Ratus ratus.....180