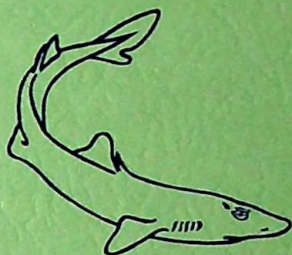


THE BULLETIN

MOUNT DESERT ISLAND
BIOLOGICAL LABORATORY
Salisbury Cove, Maine



1965



THE BULLETIN OF
THE MOUNT DESERT ISLAND
BIOLOGICAL LABORATORY
SALISBURY COVE, MAINE
1965

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CONTENTS

DESCRIPTION OF FACILITIES	iii
PERSONNEL 1965	vi
BOARD OF TRUSTEES 1965-66	ix
RESEARCH PROGRAMS 1965	x
SEMINARS	xvi
ABSTRACTS (compiled by H. V. Murdaugh)	1
INDEX TO ABSTRACTS	43

DESCRIPTION OF FACILITIES

The Mount Desert Island Biological Laboratory is an independent marine biological station on the coast of Maine near the mouth of the Bay of Fundy which provides a seasonal research facility for investigations on local flora and fauna. Basic laboratory space for 27 research programs, simple glassware, common chemicals and certain specialized equipment are available for investigators. During 1965 there were 74 scientific personnel in 32 research groups representing 32 institutions in 18 states. There were 47 professional scientists with 24 students in the 1965 programs.

No formal courses are offered, but some advanced undergraduate, graduate, and medical students spend the summer as assistants to senior investigators, thereby gaining research training. Most of these students are selected by the investigators from their home institutions.

History and Organization

The Laboratory was founded in 1898 by J. S. Kingsley, of Tufts College, and its original location was at South Harpswell, Maine. The site at Salisbury Cove was donated to the Laboratory by the Wild Gardens of Acadia, a group instrumental in the establishment of Acadia National Park, and removal to this location was completed in 1921. The first laboratory buildings, the original salt water system and some of the residential cottages were constructed or obtained by the gifts of local summer residents.

The Mount Desert Island Biological Laboratory was incorporated in 1914 under the laws of the State of Maine as a non-profit scientific and educational institution, and it is owned and operated by the Trustees and members of the Corporation. At present there are 262 members of the Corporation. It functions without full time professional administrative personnel and in most ways it is a cooperative enterprise. Income is derived from membership dues, laboratory fees, cottage rentals, investments, private and corporate donations, and grants. The business and scientific management of the Laboratory is in the hands of the Director and the Board of Trustees.

The Directors have been: Ulrich Dahlgren, Princeton University (1920-26); H. V. Neal, Tufts College (1926-31); William H. Cole, Rutgers University (1931-40); Roy P. Forster, Dartmouth College (1940-47); J. Wendell Burger, Trinity College (1947-50); Warner F. Sheldon, University of Pennsylvania (1950-56); Raymond Rappaport, Jr., Union College (1956-59); Alvin F. Rieck, Marquette University (1959-64); William L. Doyle, University of Chicago (1964-).

Location

Mount Desert Island lies in the Gulf of Maine about 150 miles east of Portland, Maine, and is connected to the mainland by a short bridge. Year round air service is available to Bangor, Maine with seasonal service to Bar Harbor Airport. The island has an area of more than 100 square miles and is traversed east to west by a range of glaciated mountains and north to south by a narrow fiord six miles long that partially divides the east and west halves. Among the mountains lie several deep fresh water lakes and shallow ponds. Much of the mountainous area is a part of Acadia National Park. The Island is separated from the mainland and adjacent islands by

narrow deep bays. Spring tides average 13.2 feet and neap tides 8.7 feet. The mean tide interval is 10.6 feet.

The many varied biological resources of the Acadian area are readily available. In summer, the cold waters of the Gulf of Maine are rich in marine life. The rocky shores, mud flats and strong tidal currents provide a variety of habitats. Fresh water lakes and ponds and the mixed terrain give further diversity to the forms available. Certain forms are abundant, others are scarce. The research abstracts in past Bulletins will give a good indication of the common forms. (See especially Vol. 5, No. 1). The director will be glad to furnish a candid estimate of the availability of any special forms.

Physical Plant

The Laboratory is situated on a tract of about 150 acres fronting on Frenchman Bay at Salisbury Cove in the Township of Bar Harbor. In addition to shore frontage, the Laboratory owns part of a fresh water pond and brook, and its land varies from meadow and forest to sphagnum bog.

Investigation is carried on in single story buildings of frame construction located along the shore. These buildings are as follows:

(1) The Neal Laboratory. This, the oldest and largest of the laboratory buildings was remodeled in 1955 and now contains eight laboratories: four large rooms that will each accommodate 3 to 4 persons, and four small rooms suitable for single investigators. All rooms are provided with gas, and fresh and salt water. Water troughs, aquaria, and larger tanks are located along the north wall outside.

(2) The Halsey Laboratory was remodeled in 1961 and consists of four rooms each capable of accommodating 3 to 4 persons. The rooms all have gas, fresh and salt water. Refrigerators, ovens and aquaria are located on a common terrace at the entrance to the building.

(3) The Lewis Laboratory consists of two adjacent rooms each capable of accommodating 3 to 4 persons.

(4) The Kidney Shed is a single large laboratory that was used for several years by Dr. Homer Smith's research group.

(5) The Hegner Laboratory contains 10 laboratory rooms provided with salt and fresh water each accommodating 1 to 2 persons.

(6) The Darkroom-Laboratory was erected in 1962 and contains one laboratory suitable for 2 to 3 persons and equipped with salt and fresh water, and a photographic dark room for general use.

(7) The Instrument Room was renovated in 1955 for the purpose of housing equipment used in common by members of the Laboratory. It contains a refrigerated centrifuge (International PR2), Warburg apparatus (circular), Baird flame photometer, pH meters, Coleman spectrophotometer (Junior), Beckman spectrophotometer DU, muffle furnace, clinical centrifuges, small autoclave, deep freezes, ice makers, refrigerators and stills.

(8) Equipment Building. This building was erected in 1965. It houses isotope counting systems, ultracentrifuges, spectrophotometers, and space for chromatography.

(9) Shop and Stockroom. The shop contains power and hand tools for woodworking; the stockroom has chemical, glassware, analytical balances, a fume hood and an area for glassworking.

(10) Office and Library. A separate building was constructed in 1955 to contain the Direc-

tor's Office and to house the business records and library. The library is small, comprising reference texts for biology and medicine, a few complete journals (Biological Abstracts, Biological Bulletin and the Journal of the Marine Biological Association), as well as monographs and a sizable reprint collection.

(11) Dahlgren Hall, the former village schoolhouse, was purchased and converted to use as a meeting hall. The single large room can seat about 120 persons. It is equipped with projectors for regular lantern slides, 35 mm slides, and 16 mm silent motion pictures.

(12) The Dining Hall. This dining hall and living room for about 20 junior investigators and students was built in 1963. It is operated by a cook-manager. A small general library of books and records, and a record player have been furnished by private donation.

(13) Bowen Hall is one of the finest remaining examples of early 19th century Island architecture. Formerly used as the Dining Hall, it now serves as a dormitory and common room for young women.

(14) Dock. The dock consists of two floats with livewells and attached live cars for storage of specimens. It is attached to the shore by an inclined ramp and a bridge and abutment.

(15) Collecting Boats. A 32' gasoline powered collecting boat, the Squalus, was purchased in 1958. It is provided with a circulating water tank for the transportation of specimens. Some simple dredging gear is available for collecting purposes and arrangements can be made with local fishermen for offshore specimens. A Nova Scotia skiff with an outboard motor is also used for collecting and a few hand powered skiffs are available to investigators.

Housing

Sixteen cottages suitable for families with children stand on land owned by the Laboratory and are within easy walking distance of it. The cottages are rented by the season, or occasionally for shorter periods. Occupants must supply their own blankets, linen, and silver, pay for utilities (electricity and gas), and pay the Laboratory for the use of the cottage (including water rent and garbage disposal). Rent is \$350 to \$450 per season, depending upon the size of the cottage. A few privately owned cottages are also available for rental near the Laboratory, and in other communities on the island. An automobile is essential for family mobility in the area.

Single investigators, student assistants, and couples without children rent rooms in the village and take their meals in the Laboratory Dining Hall. The weekly charge for meals is based on self-sustaining non-profit operation.

In order to encourage private construction and ownership of cottages by workers, the Laboratory has a policy of issuing leases on certain plots of laboratory land. Provision is made for sale or rental of the cottages to other workers in case the owner finds it impossible to continue to work at the Laboratory. In this way, the Laboratory is able to encourage capital investment by individuals and at the same time ensure that the land will remain under its own jurisdiction. Privately owned cottages on leased land are currently held by Doyle, Forster, Hogben, Rall, Rappaport, Rieck, Sheldon, and Wilde.

Recreational Activities

Mount Desert Island has long been known to have one of America's most desirable summer climates. The ocean, rocky shores, and mountains provide scenery of unexcelled beauty. The distance from large metropolitan areas has so far helped to keep it realtively unspoiled.

Swimming, hiking, mountain climbing, picnicking, boating and sailing, tennis, golf, and other sports are readily available. Acadia National Park with its excellent naturalists' program contributes to the general interest. There are small museums of Indian and local lore, public gardens, a good public library and cultural exhibits. Proximity to the Jackson Laboratory adds scientific interest and resources.

Salisbury Cove is an old fishing and farming community on the northern shore of the island near the main road from Bar Harbor to Ellsworth. It has one general store. The Laboratory colony comprises about 100 adults and 60 children of assorted ages, and forms a considerable portion of the summer population of the village.

Bar Harbor, the largest town on Mount Desert Island, is about six miles from the Laboratory and provides many of the services of a city including excellent shopping facilities and a good hospital. The fire of 1947 did no damage to the Laboratory area, nor are its visible effects on the Island as marked as might be expected. For biologists, the ecological changes produced by this fire are of great interest.

Applications

Fees for research space vary according to the demand made on the facilities. They range from \$150 to \$600 depending on the space assigned and the number of workers. All investigators have the use of the general facilities, but special arrangements are necessary if unusual demands are anticipated. Investigators are urged to bring their own specialized equipment and chemicals. On occasion, the Laboratory may be able to provide apparatus which would have long term usefulness for other workers. Since the Laboratory is closed for nine months of each year, the general policy has been to maintain as little delicate or especially valuable equipment as possible. Isotope counting systems and ultracentrifuges are available on a fee basis. Persons planning to use isotopes must make prior arrangements in conformity with our Radiation Safety Committee requirements.

Limited fellowships are supported by funds from the Ulrich Dahlgren Memorial Fund (a gift from the American Philosophical Society) and by The National Science Foundation.

Application and inquiries should be addressed to the Laboratory Director, Dr. William L. Doyle:

June 1 - September 1	Mount Desert Island Biological Laboratory Salisbury Cove, Maine
September 1 - June 1	Department of Anatomy University of Chicago Chicago, Illinois 60637

Personnel 1965

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Name	Institution
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Edgar Bering, III	Harvard University
Dr. John Boylan	University of New York
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Dr. Neal Bricker	Washington University
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*Dr. J. W. Burger	Trinity College
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Dr. Richard B. Crawford	University of Pennsylvania
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Dr. J. W. Everingham	Northwestern University
Jay Farber	University of New York
Dr. Irving Fritz	University of Michigan
*Dr. Roy P. Forster	Dartmouth College
Dr. Lawrence Gartner	Einstein College of Medicine
Barbara Gerstein	University of New York
*Dr. Leon Goldstein	Harvard Medical School
Dr. William C. Grant, Jr.	Williams College

* indicates Trustee.

Name	Institution
Dr. Richard M. Hays	Einstein College of Medicine
Fred J. Hendler	Williams College
Dr. Robert Hiatt	Columbia University
*Dr. Adrian Hogben	University of Iowa
Larry A. Holle	Washington University
Dr. K. C. Huang	University of Louisville
Dr. W. P. Jollie	Tulane University
Mrs. W. P. Jollie	Tulane University
Dr. William B. Kinter	University of New York
Gerald Lazar	University of Pennsylvania
Dorothy Lin	University of Louisville
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David Maren	University of Florida
Shiela Mayer	Washington University
Ralph L. McBean	Harvard Medical School
Dr. Eugene Millen	University of Pittsburgh
*Dr. H. V. Murdaugh	Medical College of Alabama
Marjorie Neppel	Harvard Medical School
Dr. R. F. Palmer	University of Florida
Valerie Phillips	University of Pittsburgh
Dr. Aaron S. Posner	Cornell Medical School
*Dr. David P. Rall	National Cancer Institute
*Dr. Raymond Rappaport	Union College
Jeffrey Ratner	Union College
Dr. John Rhodin	New York Medical College
*Dr. Alvin F. Rieck	Marquette University
Mary Rieck	Marquette University
*Dr. Eugene D. Robin	University of Pittsburgh
Robert Rout	University of Pittsburgh
Dr. James M. Schooler, Jr.	Harvard Medical School
Stuart Simon	Williams College
Maria Somjen	Duke University
Carro Svenson	Columbia University
Dr. James Theodore	University of Pittsburgh
Dr. Daniel C. Tosteson	Duke University
Joan Walls	Mount Holyoke College
Dr. John Weber	Cornell Medical College
Peter Weller	Harvard University
Dr. Charles E. Wilde, Jr.	University of Pennsylvania
Deborah Wilde	Vassar College
Charles E. Wilde, III	Yale University
Christine Wiley	University of Florida
Dr. Charles W. Young	Sloan-Kettering Institute

The Mount Desert Island Biological Laboratory
Salisbury Cove, Maine

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C. A. M. Hogben	by election
H. Victor Murdaugh	by election

Research Programs 1965

Name and Rank: Irwin M. Arias, M.D.
Associate Professor of Medicine

Mailing Address: Albert Einstein College of Medicine
Eastchester Road and Morris Park Avenue
New York 61, New York

Title of Project: Bile Pigment Metabolism in the Dogfish and the Goosefish

Associate: Lawrence Gartner, M.D.

Name and Rank: C. Dale Beers, Ph.D.
Professor Emeritus of Zoology

Mailing Address: Department of Zoology
University of North Carolina
Chapel Hill, North Carolina 27515

Title of Project: Host-ciliate Relationships in Green Sea Urchins

Name and Rank: John W. Boylan, M.D.
Associate Professor of Physiology and Medicine

Mailing Address: Sherman Hall
State University of New York at Buffalo
Buffalo, New York

Title of Project: Osmoregulation in Squalus acanthias

Associates: Barbara Gerstein
Jay Farber

Name and Rank: Neal S. Bricker, M.D.
Internal Medicine, Renal Division

Mailing Address: Washington University School of Medicine
St. Louis, Missouri

Title of Project: Ion Transport across Biologic Membranes

Associates: Sheila Mayer
Larry Holle

Name and Rank: Maurice B. Burg, M.D.
Senior Investigator

Mailing Address: National Heart Institute
Bethesda, Maryland

Title of Project: Kinetics of Organic Acid Transport in Isolated Renal Tubules of the Flounder

Associate: Peter Weller

Name and Rank: J. Wendell Burger, Ph.D.
Professor of Biology

Mailing Address: Trinity College
Hartford, Connecticut 06106

Title of Project: (1) The regulation of electrolytes and water in the spiny dogfish
(2) Liver blood flow in spiny dogfish

Associate: Dr. Stanley Bradley

Name and Rank: Richard Crawford, Ph.D.
 Associate Professor of Microbiology

Mailing Address: School of Dental Medicine
 University of Pennsylvania
 Philadelphia, Pennsylvania 19105

Title of Project: Energetics, Nucleic Acid Metabolism, and Protein Synthesis in Early
 Embryo Development

Associate: Gerald Lazar

Name and Rank: William L. Doyle, Ph.D.
 Professor of Anatomy

Mailing Address: Department of Anatomy
 University of Chicago
 Chicago, Illinois 60637

Title of Project: Fine Structure and Salt Regulation

Name and Rank: Richard Ellis, Ph.D.
 Associate Professor of Biology

Mailing Address: Department of Biology
 Brown University
 Providence, Rhode Island 02912

Title of Project: (1) Regeneration of Salt Glands
 (2) Studies on the Rectal Salt Glands of Dogfish

Associate: John Abel

Name and Rank: Roy P. Forster, Ph.D.
 Ira Allen Eastman Professor

Mailing Address: Department of Biological Sciences
 Dartmouth College
 Hanover, New Hampshire

Title of Project: Patterns of Nitrogen Excretion in Aquatic Vertebrates

Name and Rank: Leon Goldstein, Ph.D.
 Assistant Professor of Physiology

Mailing Address: Harvard Medical School
 25 Shattuck Street
 Boston, Massachusetts

Title of Project: Nitrogen Excretion in Fishes and Other Aquatic Vertebrates

Associates: Dr. James M. Schooler
 Deborah Wilde
 Ralph McBean
 Marjorie Neppel

Name and Rank: William C. Grant, Jr., Ph.D.
 Professor of Biology and Chairman

Mailing Address: Department of Biology
 Williams College
 Williamstown, Massachusetts

Title of Project: Endocrine Control of Blood Sugar in Skates of the Genus Raja

Associates: Fred Hendler
 Stuart Simon

Name and Rank: Richard M. Hays, M.D.
Assistant Professor

Mailing Address: Department of Medicine
Albert Einstein College of Medicine
Eastchester Road and Morris Park Avenue
New York 61, New York

Title of Project: Active Sodium Transport and Response to Vasopression of Frog Skin during Metamorphosis

Name and Rank: Robert B. Hiatt, M.D.
Associate Professor of Surgery

Mailing Address: Columbia University
630 West 168th Street
New York, New York

Title of Project: Annelids and Arthropods

Associate: Carro Svenson

Name and Rank: C. Adrian M. Hogben, Ph.D.
Professor of Physiology and Chairman

Mailing Address: Department of Physiology
University of Iowa
Iowa City, Iowa

Title of Project: Continued Study of Trans-epithelial Transport of Dogfish Gastric Mucosa and Pollack Swim Bladder

Associates: Dr. Albert Sedar
Maria Somjen

Name and Rank: K. C. Huang, M.D.
Professor of Pharmacology

Mailing Address: University of Louisville Medical School
511 South Floyd Street
Louisville, Kentucky

Title of Project: Intestinal and Renal Transport of Amino Acids n in Teleost Fishes

Associates: W. Robert Rout
Dorothy Lin

Name and Rank: William P. Jollie, Ph.D.
Assistant Professor of Anatomy

Mailing Address: Department of Anatomy
Tulane University School of Medicine
New Orleans, Louisiana 70112

Title of Project: Fine Structural Accommodations for Maternofetal Exchange in Squalus Acanthias

Associate: Ludmilla Jollie

Name and Rank: William B. Kinter, Ph.D.
Professor of Physiology

Mailing Address: Department of Physiology
State University of New York
Upstate Medical Center
766 Irving Avenue
Syracuse, New York 13210

Title of Project: Kinetics of Bidirectional Dye Transport in Isolated Renal Tubules of Flounder and Dogfish

Name and Rank: Thomas H. Maren, M.D.
Professor of Pharmacology

Mailing Address: College of Medicine
University of Florida
Gainesville, Florida

Title of Project: (1) Studies of Na-K activated ATP-as in the rectal glands of the dogfish
(2) Temperature optima of enzymes in Frenchman Bay

Associates: Christine Wiley
Dr. Roger Palmer

Name and Rank: H. V. Murdaugh, Jr., M.D.
Associate Professor of Medicine

Mailing Address: Medical College of Alabama
1919 7th Avenue, South
Birmingham, Alabama 35233

Title of Project: (1) Studies of physiological and metabolic adaptation to diving in the harbor seal
(2) Gill gas exchange in the dogfish

Associate: William Drewry
Judith Burger

Name and Rank: Dr. Aaron S. Posner
Associate Professor

Mailing Address: Department of Biochemistry
Cornell University Medical College
535 East 70th Street
New York, New York

Title of Project: Ultrastructure of Marine Calcification

Associate: Dr. John Weber

Name and Rank: Dr. David P. Rall
Chief, Laboratory of Chemical Pharmacology

Mailing Address: Laboratory of Chemical Pharmacology
National Cancer Institute
Bethesda, Maryland

Title of Project: (1) Studies on ventricular fluid, choroid plexus, and brain of the dogfish
(2) Drug distribution and metabolism in the dogfish

Associates: Dr. Robert Dixon
Edgar Bering

Name and Rank: Raymond Rappaport, Jr.
Professor of Biology

Mailing Address: Department of Biological Sciences
Union College
Schenectady, New York 12308

Title of Project: Experimental studies on the mechanisms of cytokinesis in animal cells

Name and Rank: Dr. Johannes A. G. Rhodin
Professor and Chairman

Mailing Address: Department of Anatomy
New York Medical College
Fifth Avenue at 106th Street
New York, New York

Title of Project: Structure of the Mature and Developing Fish Kidney

Name and Rank: Alvin F. Rieck, Ph.D.
Associate Professor

Mailing Address: Department of Physiology
Marquette University School of Medicine
561 North 15th Street
Milwaukee, Wisconsin 53233

Title of Project: Photobiology of the Cell Cycle in Cleaving Zygotes of Echinarachinus parma

Associate: Mary Rieck

Name and Rank: Dr. Eugene D. Robin
Professor of Medicine

Mailing Address: Department of Medicine
University of Pittsburgh School of Medicine
Pittsburgh, Pennsylvania 15813

Title of Project: Seal:
(1) The ability of seal muscle to work anerobically for long periods under unfavorable circumstances (pt1, lactate, O₂ tensions)
(2) The apparent "violation" of the law of conservation of energy during diving
Dogfish:
(1) Nature of the mechanisms underlying gas exchange across dogfish gill
(2) Ion transport in dogfish erythrocytes
(3) Urea transport in dogfish tissues

Associates: Dr. James Theodore
Eugene Millen
Valerie Phillips

Name and Rank: Dan C. Tosteson, Ph.D.
Professor of Physiology and Chairman

Mailing Address: Department of Physiology and Pharmacology
Duke University Medical Center
Durham, North Carolina 27706

Title of Project: Sodium Transport in Eel Gills

Associate: Keith Butler

Name and Rank: Charles E. Wilde, Jr., Ph.D.
Professor and Chairman

Mailing Address: Department of Histology and Embryology
School of Dental Medicine
University of Pennsylvania
Philadelphia 4, Pennsylvania

Title of Project: The role of cytochromes, RNA, DNA, etc., in the dynamics of morphogenesis and differentiation in Fundulus heteroclitus and Ehinarachnius parma

Name and Rank: Charles W. Young, M.D.
Research Associate

Mailing Address: Sloan-Kettering Institute
410 East 68th Street
New York, New York

Title of Project: Effects of compounds (cycloheximide, pactamycin, and puromycin)
which inhibit synthesis of protein in mammalian systems upon incorporation of amino acids into protein and thymidine into DNA of sand dollar embryos

Effects of hydroxamic acid compounds (hydroxyurea, hydroxyurethane) upon incorporation of thymidine into DNA of sand dollar embryos

Associates: Dr. David Karnofsky
Joan Walls

Additional Short Term Investigators

1965

John S. Cook Department of Physiology, New York University
550 First Avenue, New York 16, New York

John W. Everingham Department of Anatomy, Northwestern University
Chicago, Illinois 60611

Irving B. Fritz Department of Physiology, University of Michigan
Ann Arbor, Michigan 48104

R. L. Hancock The Jackson Laboratory
Bar Harbor, Maine 04609

Standish C. Hartman Department of Biological Chemistry, Harvard University
Boston, Massachusetts

Philip Malone Western Reserve University
Cleveland, Ohio

Gerald P. Rodnan Department of Medicine, University of Pittsburgh
Pittsburgh, Pennsylvania 15213

Sherman M. Wiessmann National Cancer Institute
Bethesda, Maryland

Seminars 1965

Tuesday Evening Seminars:

- July 6 "Mount Desert Island Biological Laboratory: Present and Future"
Dr. William L. Doyle
The University of Chicago
- July 13 "The Southdown and the Corriedale: Studies of the Hepatic Uptake and Excretion of Organic Anions"
Dr. Charles Cornelius
School of Veterinary Medicine
Davis, California
- July 20 "Observations on Early Colonization of Iceland"
Dr. Joseph F. Volker
University of Alabama Medical Center
- July 27 "Ultrastructure of Hard Tissue"
Dr. Aaron S. Posner
Cornell University Medical College
- August 4 "Gas Exchange and Diving Reflex in Geese"
Dr. Jerome E. Conn
University of Kentucky School of Medicine
- August 10 "The Physiology of Growth Hormone"
Dr. Ernst Knobil
University of Pittsburgh School of Medicine
- August 17 "Adaptation to Water Shortage in Rodents, Reptiles, and Insects"
Dr. Bodil Schmidt-Nielsen
Western Reserve University
- August 24 "Energetics Considerations in Early Embryo Development"
Dr. Richard B. Crawford
University of Pennsylvania

Friday Afternoon Seminars:

- July 9 and 16 "Brief Summaries of Projects"
All Investigators
- July 23 "Some Recent Observations on the Renal Regulation of Acid-Base Equilibrium"
Dr. William B. Schwartz
Tufts University Medical Center
- July 30 "Potassium Fluxes Across Frog Skin"
Dr. Peter Curran
Harvard Medical School
- August 6 "Ureogenesis in Fishes"
Dr. Leon Goldstein
Harvard Medical School

August 13

"Excretion of Electrolytes in the Spiny Dogfish"

Dr. J. Wendell Burger
Trinity College

August 20

"Is there a specific mechanism for tubular reabsorption of phenol red-like anions in flounder kidney?"

Dr. William B. Kinter
The University of New York