

The name of the Roscoe B. Jackson Memorial Laboratory was officially changed to The Jackson Laboratory on Sept. 18, 1963.



Aerial view of the Main Laboratory complex of the Roscoe B. Jackson Memorial Laboratory showing 12 of its 27 buildings. Upper left: Morrell Park Laboratory. Lower left: Animal Health Research Laboratory. At right is the Main Laboratory, which houses a large part of the Laboratory's research program.

## ROSCOE B. JACKSON MEMORIAL LABORATORY

EARL L. GREEN, DIRECTOR<sup>1</sup>

The purpose of the Roscoe B. Jackson Memorial Laboratory is to increase knowledge of development, growth, reproduction, physiological and psychological behavior, and inborn ailments through re-

search with genetically controlled experimental animals. Populations of inbred, hybrid, and mutant-bearing mice, of inbred and mutant-bearing rabbits, and of five breeds of dogs, along with some rats and guinea pigs, are the principal sources of research animals.

The Laboratory, located in Bar Harbor,

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## ROSCOE B. JACKSON MEMORIAL LABORATORY

Maine, was founded in 1929 as a private, non-profit research laboratory by Dr. C. C. Little, who continued as its director until his retirement in 1956. Initially the research work of the Laboratory was devoted to the basic aspects of the cancer and the radiation problems for which inbred strains of mice were most valuable. In the ensuing years, research has grown to cover many other areas in which genetics and genetically controlled strains are vital. These include muscular dystrophy, tissue grafting, immunology, blood anomalies, morphogenesis, teratology, behavior, cell biology, and cytology.

The Laboratory has 35 staff scientists with doctoral degrees, 90 research and technical assistants, an administrative staff of five, and other supporting personnel to make a total of 300 employees. There is no formal organization of the staff into departments or divisions. Rather, the functional units of the Laboratory are the research projects, numbering about 50, each with space, personnel, and budget. New projects are added and old ones dropped as staff members develop new leads and new interests. A given staff member may be concerned with two or three projects at the same time.

The basic research of the Laboratory is unified by the strong thread of genetics which extends through all its projects. About one-half the staff members are geneticists; the others are biochemists, physiologists, immunologists, psychologists, embryologists, and pathologists. Each staff member selects and develops his own research projects, limited only by the space, funds, and animals available.

One of the staff members has carried out an intricate breeding system to uncover and isolate the genetic factors which govern histocompatibility in the mouse. Others have worked on the immunological and biochemical characterization of immune antigens. Another has developed new, simple, chemically defined media for the growth of cells in culture. Still another has found a way of curing a type of

hereditary anemia in mice. The discovery of obese and of dystrophic mutant mice in the Laboratory's strains created new fields of research by providing the first experimental animals for studying these diseases. A testicular teratoma found in one inbred strain added another phase to the cancer research program. These are but a few examples of the numerous types of investigation now in progress at the Laboratory.

Summer training programs for precollege students and for college, graduate, and medical students are conducted by the Laboratory. A short course in medical genetics for members of medical school faculties is given each summer in collaboration with The Johns Hopkins University School of Medicine. The precollege program of nine weeks provides a research apprenticeship for each student, since each works intimately with a staff member on a research project of his own choosing. The 10-week program for college, graduate, and medical students is also devoted to providing a personal research opportunity for each student. In addition, the Laboratory receives predoctoral and postdoctoral fellows, usually six or eight each year.

Visiting investigators may come to the Laboratory at any time throughout the year for a period of collaborative work and study with a staff member. The essential feature of the visiting investigator program is that each must be sponsored by a staff member, who provides space and facilities for the investigator. No fee is charged for such cooperative projects.

The Laboratory produces about 1,000,000 mice per year for use in its own research projects. Another 1,000,000 mice are produced and, after first being observed for unusual types which may be valuable new genetic mutations, are distributed to research workers elsewhere. In order to accomplish this large scale production, the stocks of mice are organized into five units.

The Foundation Stocks contain about 30 inbred strains of mice which are propagated to continue the strains and to supply breeding pairs to the second unit, the

Pedigreed Expansion Stocks. Here 17 of the inbred strains are expanded through three generations and supply breeding pairs to the next unit, the Production Stocks, where mice of inbred strains and hybrids between certain inbred strains are produced in large numbers. All of the strains have been inbred by at least 20 generations of brother-sister matings, some for over 100 generations.

A fourth unit, the Mutant Stock Center, maintains over 130 named mutations in the mouse and carries out studies on allelism and linkage. Among the mutations are a great variety affecting coat color as well as neuromuscular, skeletal, and metabolic characteristics.

The Tumor Stocks Center, the fifth unit, propagates about 30 transplantable tumors of the mouse. The tumor stocks and mutants are a rich but as yet relatively untapped source of research material, available to qualified investigators at other institutions.

The principal buildings of the Laboratory are located in three places. The Main Laboratory, south of Bar Harbor, is a modern brick and aluminum building erected in 1949-50 following a forest fire in 1947 which demolished the previous laboratory. The Morrell Park Laboratory, just south of the Main Laboratory, is a brick building of 30,000 square feet erected in 1959-60 for the production of mice for research. Hamilton Station, a cluster of buildings near Salisbury Cove about 10 miles from the Main Laboratory, is devoted to work with rabbits and dogs. In addition the Laboratory has a few small cottages for

visiting investigators, a summer residence adapted to house precollege students, and cottage-dormitories for college, graduate, and medical students in the summer.

The annual operating budget is about 2.5 million dollars. Funds to cover each year's expenses are derived from three sources: grants-in-aid for research and training, 60%; sales of animals, 35%, and contributions, 5%.

The Laboratory is owned and governed by a Board of Trustees of 60 members. From its membership the Board of Trustees elects a Board of Directors which formulates policy. The Trustees also elect a Board of Scientific Directors to guide and review the Laboratory's research program.

The Main Laboratory complex is on State Route 3 about one mile south of the town of Bar Harbor on Mt. Desert Island, which is connected to the mainland by a bridge. Bar Harbor may be reached by Northeast Airlines from Boston to Bangor and by limousine from Bangor to Bar Harbor; or one may travel by private car on the Maine turnpike, taking Route 3 from Augusta, Maine. The Laboratory is located on the edge of Acadia National Park overlooking Frenchman's Bay in a setting of year-round beauty.

Additional information about the Jackson Laboratory may be obtained by requesting copies of the Annual Report, the Summer Bulletin, the Handbook of Genetically Standardized Jax Mice (\$1.00), or by asking to be put on our reprint exchange list to receive the 60 or more reprints of scientific papers published each year. Address: Bar Harbor, Maine.