RESEARCH FACILITIES of the

UNITED STATES FISHERY LABORATORY

Beaufort, North Carolina

RESEARCH FACILITIES OF THE UNITED STATES FISHERY LABORATORY BEAUFORT, NORTH CAROLINA

By Gerald B. Talbot, *Director of the Station*

Several much-needed facilities for research have recently been added to the United States Fishery Laboratory at Beaufort, N. C. A new fishery laboratory to replace the old wooden structure built in 1901, a radiobiological laboratory, a dormitory, a maintenance building (replacing three small buildings that were in poor condition), an oil and paint warehouse, and a concrete driveway and parking area have been completed. Thus, a construction program that was begun in 1949 to modernize this historic marine research center is ended.

As early as 1860, the Beaufort area was visited by such eminent zoologists as T. N. Gill and William Stimpson, who recognized this area as being particularly suitable for marine research. In addition to the ocean and the offshore banks bordering it, near the laboratory are several rivers and creeks, large tidal estuaries, and extensive sounds of salt, brackish, and fresh water. Marshes, peat bogs, cypress swamps, and bird rookeries offer varied research possibilities.

Elliott Coues and H. C. Yarrow, outstanding zoologists of their time, visited the Beaufort area in 1871–72, and further stimulated interest in this locality. They were followed in the next few years by professors and students from the Johns Hopkins University, who maintained a small laboratory in Beaufort for about 10 years before the United States Fish Commission established a biological laboratory here.

In 1899, the first Government station began operations in a rented building in Beaufort. The following year, the Congress authorized construction of a permanent biological station on Pivers Island, across the channel from the town of Beaufort. The fishery station was opened for research in its new quarters in 1902 and has been in operation since that time.

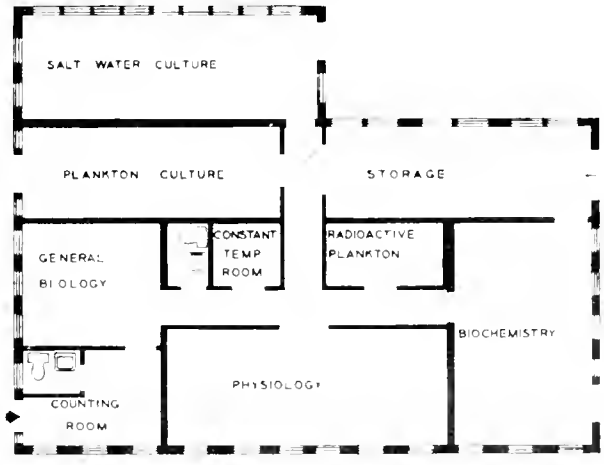
The radiobiological laboratory was completed in the spring of 1950. It is a one-story frame structure 77 feet long by 44 feet wide with an adjoining wing 42 feet long and 16 feet wide. The concrete floors are covered with asphalt tile. The building is divided into several laboratory rooms with special equipment for the various phases of research in progress. Frame partitions separate the laboratory rooms, except where protection of instruments and workers from penetrating radiation is necessary. In these cases, 17-inch-thick concrete walls that extend from floor to ceiling provide such protection.

The salt-water culture, plankton culture, and general biology laboratories, and the counting room are located at the front of the building. In the center of the building are a constant-temperature room, a physiology laboratory, and a radioactive-plankton laboratory. At the rear is the biochemistry laboratory, where the more highly radioactive material is stored and handled. To the rear and side of the building is the storage room. The rooms in the radiobiological laboratory are arranged so as to isolate the areas in which radioactive materials are handled.

Cover: Aerial view of the United States Fishery Laboratory, Beaufort, N. C., as seen looking due south

The radiobiological laboratory. Here investigations are conducted on pollution problems that can arise from the disposal of radioisotopes and fission products in the ocean. These problems are being studied in relation to the effect of nuclear wastes on the physiology and metabolism of marine organisms

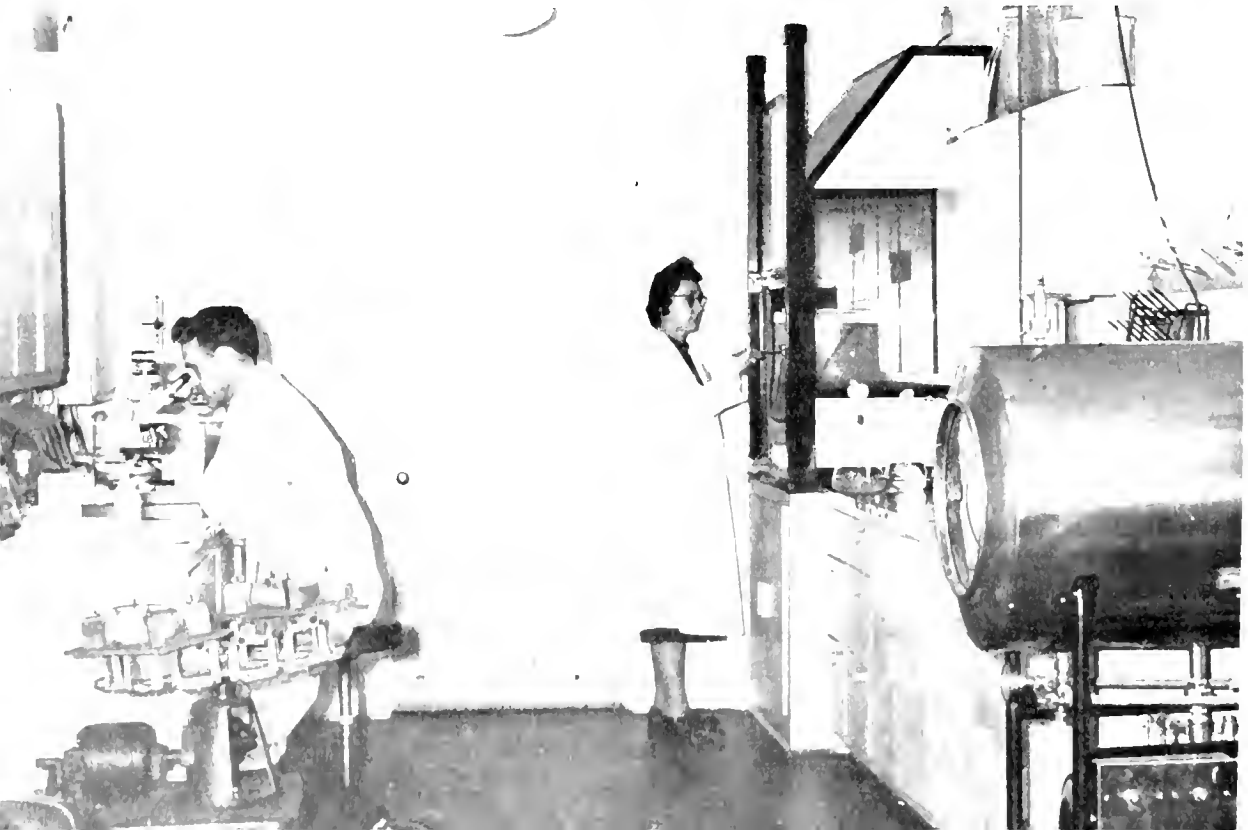
In addition to the equipment usually found in marine biological research laboratories, special equipment for radiobiological research has been installed. It includes stainless-steel fume hoods, radioactivity-survey meters (better known as Geiger counters), and scalers connected with Geiger-Müller tubes or scintillation heads for measuring beta and gamma rays. The laboratory also has physiological and biochemical equipment, including photometric instruments and a Warburg respirator; and it has facilities for culturing bacteria, planktonic algae, and other marine organisms. Air conditioning protects the delicate laboratory instruments from the damaging effects of the humidity and the salt air.



Plan of the radiobiological laboratory

A plastic pipe brings sea water direct to the salt-water culture room. Here, fish and the larger invertebrates, such as shrimp and crabs, are raised and held

Plankton-culture laboratory. Bacteria-free cultures of microscopic plants and animals are grown here under controlled laboratory conditions

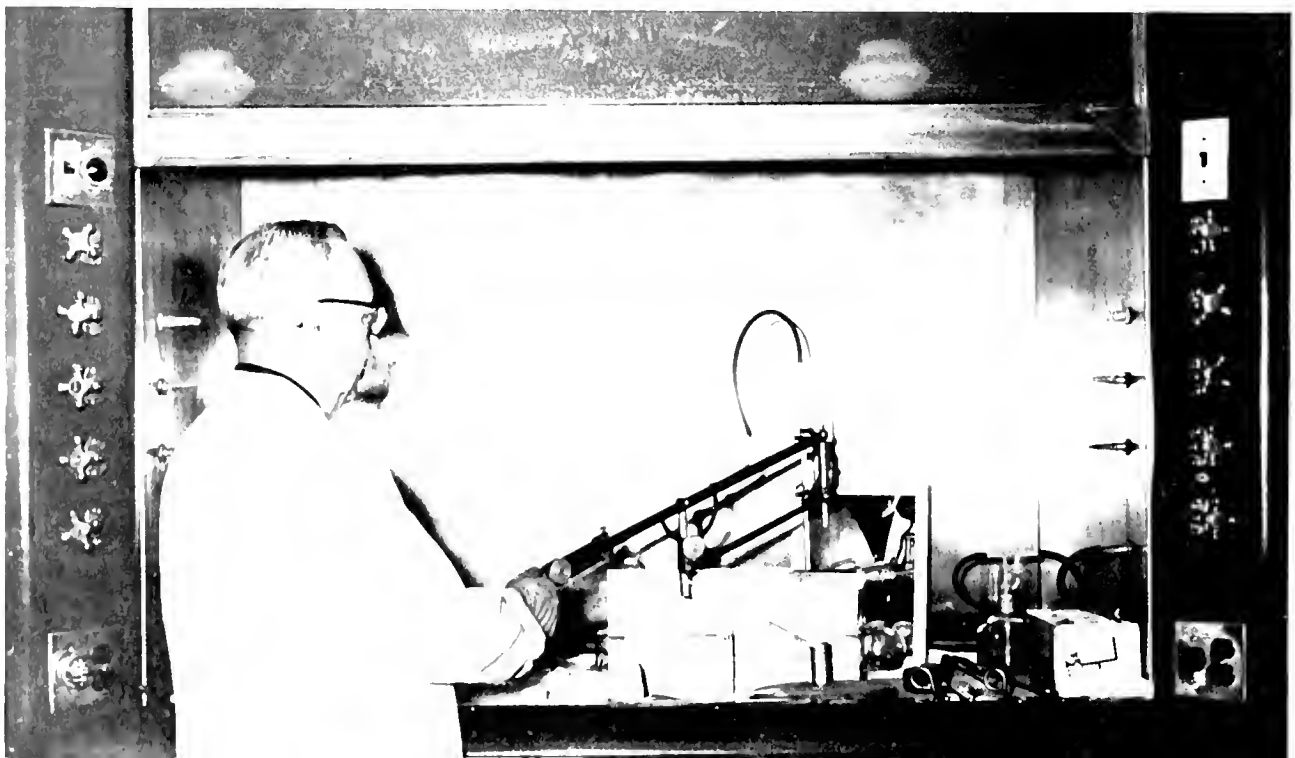


Constant light and temperature cabinet in the plankton-culture laboratory, where bacteria, marine algae, and other marine organisms are cultured

The counting room. Electronic instruments measure radioactivity. Air conditioning protects the delicate instruments from damaging humidity and salt air

Physiology laboratory. Radioisotopic tracer techniques are employed to determine the metabolic role of individual elements, including trace elements, in marine organisms

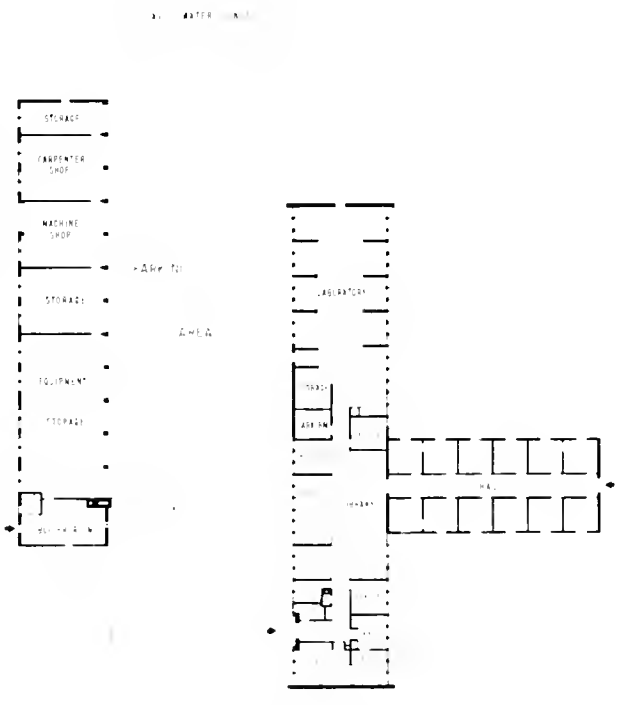
Fume hood in the biochemistry laboratory. Radioactive materials are handled here by remote control. Lead bricks protect the worker from harmful radiation



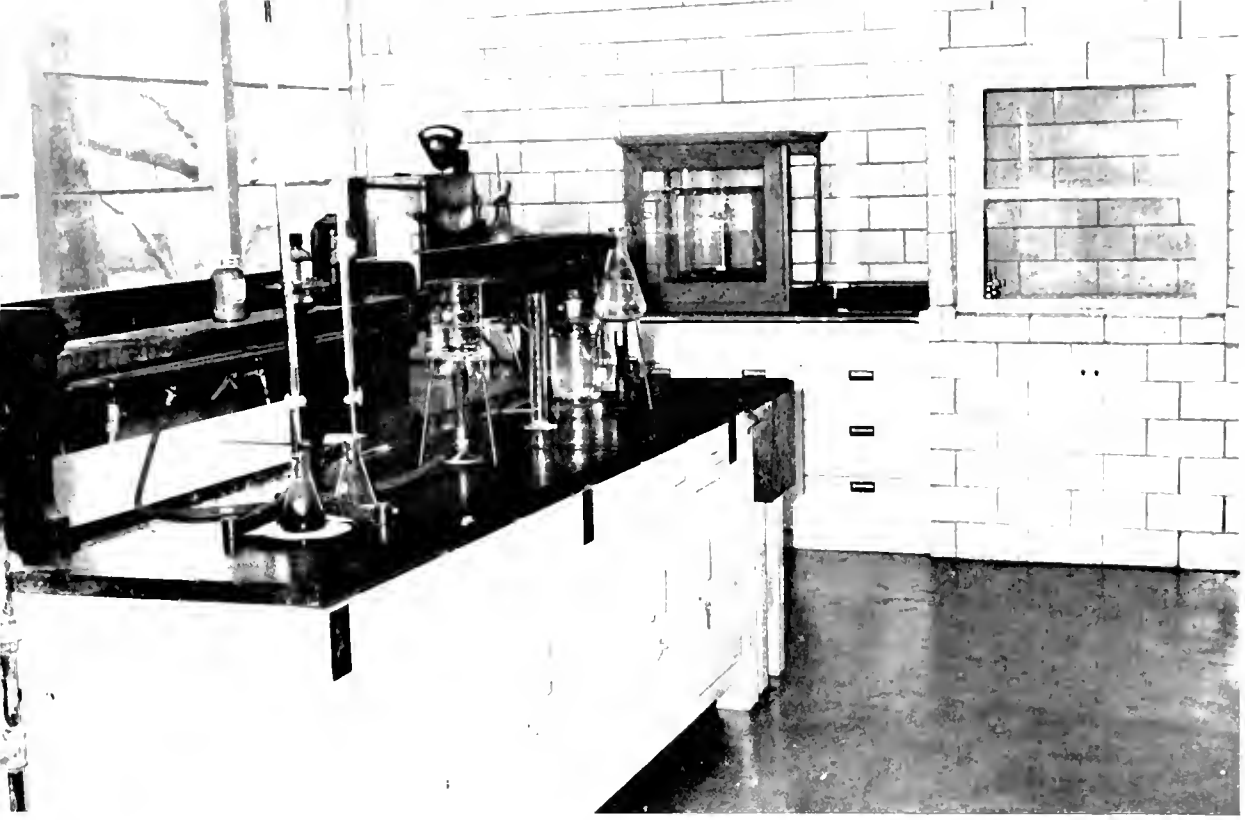
The fishery laborotory, service maintenance building, new concrete driveway ond parking area. The maintenance building (on the left) houses the garage, shops, and pumping and heating facilities, and provides storage space

The new fishery laboratory and service building are of masonry construction, well-suited to the climate of the Beaufort area. The laboratory, finished in 1954, is a one-story building, 168 feet long by 32 feet wide. A wing 72 feet long and 32 feet wide was added in 1957. The exteriors of the fishery laboratory and maintenance building are of a rough-textured, ivory-colored brick; the interior walls are finished in a pale-green tile, and the ceilings are of acoustical tile. Asphalt tile covers the concrete floors.

In one end of the fishery laboratory are the offices, the photographic darkroom, the scale-reading room, and the library; at the opposite end of the building, laboratory facilities include aquariums, water tables with running sea water, the chemistry table, fume hoods, balances, and ovens. In the wing are the offices used by staff members of the station, as well as the Branch of Statistics, of the Bureau of Commercial Fisheries.



Plan of the fishery laboratory, maintenance building, and parking area



Close-up of chemistry table showing the hot and cold-water, gas, and air connections. In the background are the analytical balance and fume hood

Dual nontoxic salt-water system, salt-water tables, and aquariums in the fishery laboratory

The Fishery Laboratory has an excellent fishery library of more than 3,600 volumes. Recently, all publications were bound and cataloged, making them readily available to research workers. The library is separated from the adjoining offices by folding doors which may be opened so that the office space is included with the library for meetings of large groups. In this way, 60 to 70 people can be seated comfortably.

The new dormitory consists of two rooms, each with a bath, and a room for supplies. Accommodations are available for 4 to 6 visitors. The building, similar to the fishery laboratory and maintenance building, is of masonry construction surfaced on the outside with ivory-colored, rough-textured brick.

The library also doubles for a conference room. On its shelves is one of the most complete fishery libraries along the east coast

Folding doors between library and offices may be opened to provide a larger space for group meetings

The dormitory

Other facilities available at the station for research purposes include 7 small oval concrete pools supplied with salt and fresh water, each measuring approximately 96 square feet; 2 large concrete pools, approximately 30- by 40-feet, supplied with running sea water; a 30- by 40-foot freshwater pool; and a 30- by 80-foot tidal pen. These pools provide space for holding experimental aquatic animals.

Two motor vessels are maintained at the station: a 36-foot V-bottom cabin cruiser equipped with a laboratory, depth recorder, a two-way radio, galley, and bunks for four; and a 26-foot V-bottom launch for daytime use. Skiffs and outboard motorboats are also available.

The United States Bureau of Commercial Fisheries will continue whenever possible to make space and facilities available to qualified private investigators, particularly when they wish to pursue problems relating to the conservation and utilization of aquatic resources.

At the present time, the United States Bureau of Commercial Fisheries is conducting research at the fishery laboratory on the cause of fluctuations in abundance of shad, menhaden, striped bass, and blue crabs, and the methods of controlling and predicting size of populations. These projects are carried out in cooperation with State agencies and extend over the entire Atlantic coast. The radiobiological laboratory is conducting research in cooperation with the Atomic Energy Commission on accumulations of fission products and other radionuclides by marine organisms and the effect of these substances on utilization of seafood resources. Also, the role of trace elements in sea water is being studied in relation to the physiology and metabolism of marine plankton, larger marine invertebrate animals, and fishes.

The cabin cruiser carries a laboratory, depth recorder, and two-way radio

Further information about the Beaufort station in its earlier days may be found in the following papers, most of which are available in Government depository libraries.

HILDEBRAND, SAMUEL F.
1930. The Bureau of Fisheries and its biological station at Beaufort, N. C. U. S. Bureau of Fisheries, Economic Circular No. 72, July. 14 pp.

PRYTHERCH, HERBERT F.
1942. The U. S. Fishery Biological Laboratory at Beaufort, N. C. American Biological Stations XX. Turtox News, vol. 20, No. 1, January.

SMITH, HUGH M.
1908. The United States Bureau of Fisheries, its establishment, functions, organization, resources, operations, and achievements. U. S. Bureau of Fisheries, Bulletin, vol. 28, pp. 1,365–1,411 (1910).
1916. The Bureau of Fisheries and its biological station at Beaufort, N. C. U. S. Bureau of Fisheries, Occasional Papers, 11 pp.

Aerial view looking east of laboratory on Pivers Island. Portion of town of Beaufort can be seen at upper left

UNITED STATES DEPARTMENT OF THE INTERIOR, Fred A. Seaton, Secretary

FISH AND WILDLIFE SERVICE, Arnie J. Suomela, Commissioner

BUREAU OF COMMERCIAL FISHERIES, Donald L. McKernan, Director

Circular 54 • Washington • 1959

GOVERNMENT PRINTING OFFICE 1959 O 4838.8