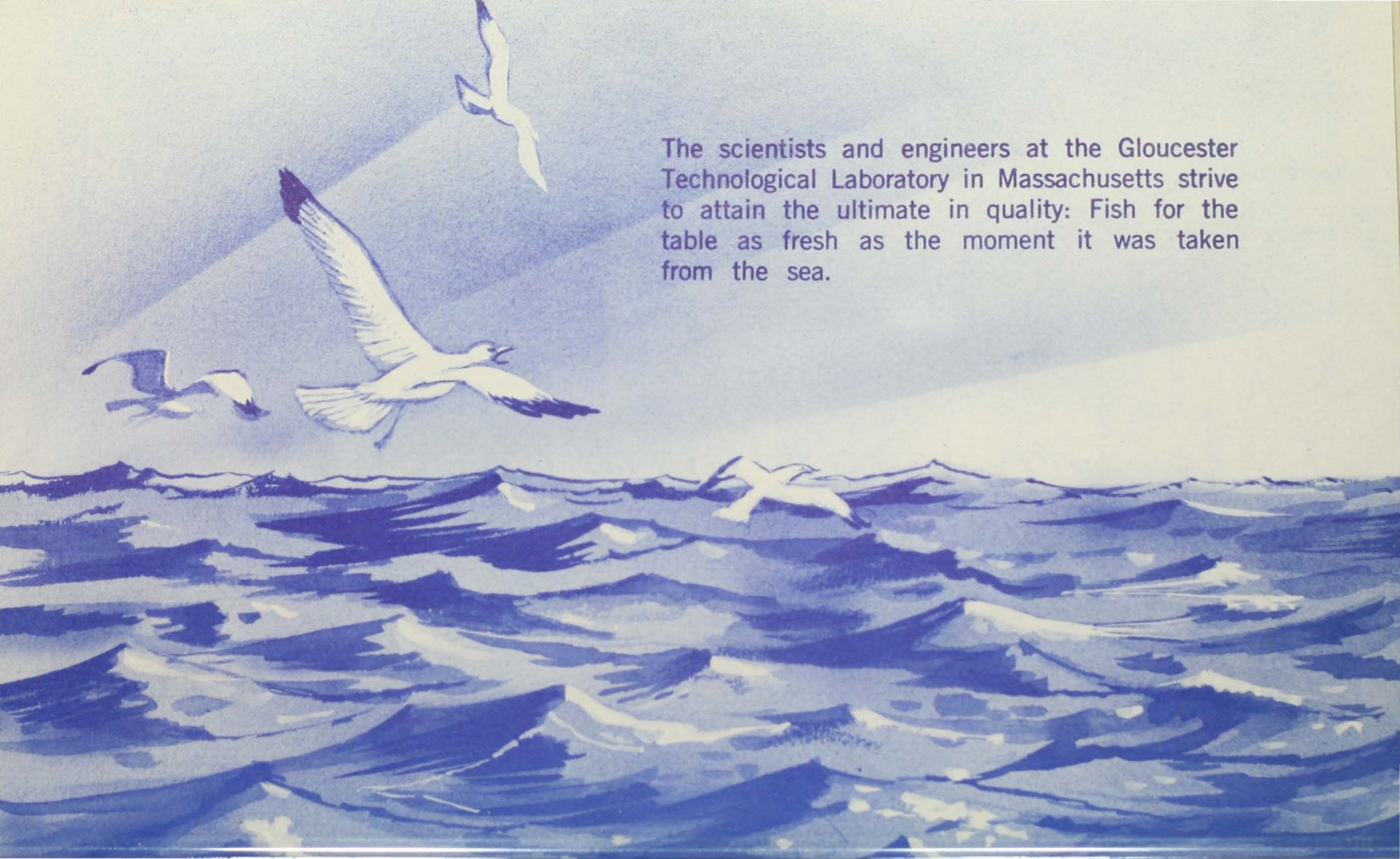


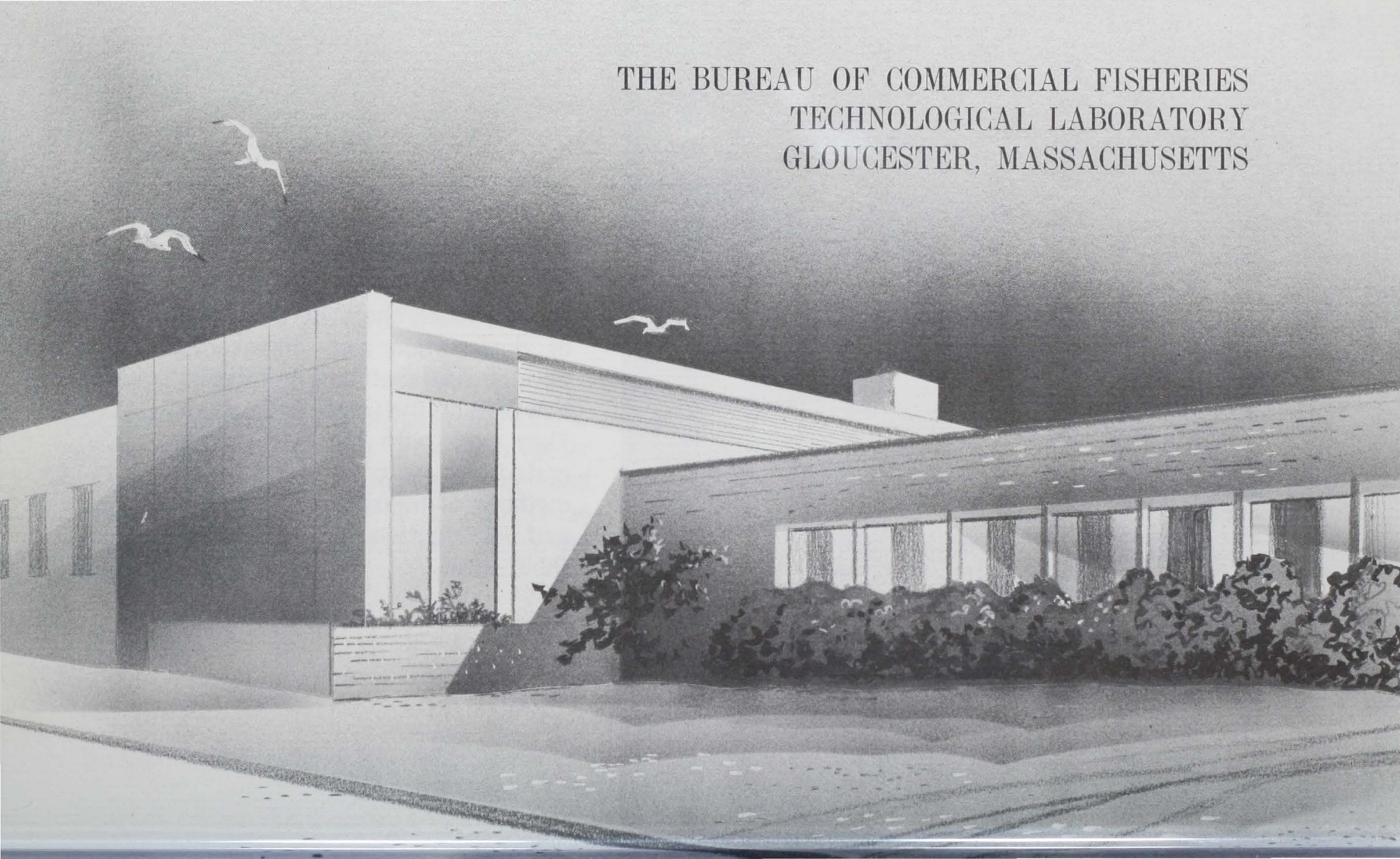


TO KEEP FISH FRESH

A blue-toned illustration of seagulls flying over the ocean. The scene is rendered in various shades of blue, from light sky to dark, textured waves. Several seagulls are shown in flight, with their wings spread, moving across the frame. The water is depicted with rhythmic, wavy patterns, suggesting movement and depth. The overall composition is clean and modern, with a focus on the natural elements of the sea and sky.

The scientists and engineers at the Gloucester Technological Laboratory in Massachusetts strive to attain the ultimate in quality: Fish for the table as fresh as the moment it was taken from the sea.

THE BUREAU OF COMMERCIAL FISHERIES
TECHNOLOGICAL LABORATORY
GLOUCESTER, MASSACHUSETTS





PRESERVATION and ENGINEERING

Bureau researchers in the fields of preservation and engineering develop new methods of handling fish both on the vessel and ashore. They work with ice, with refrigerated sea water, and with new methods of freezing, cold storage, and distribution to accomplish their goals.

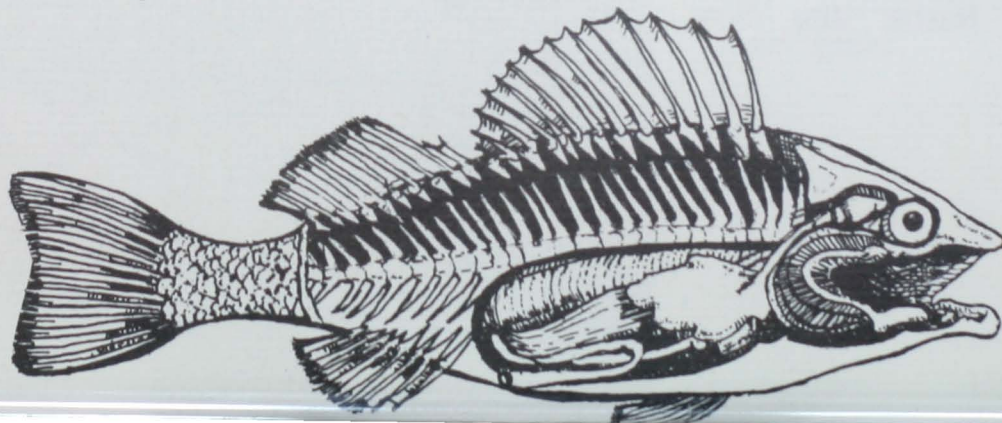
PROTEIN RESEARCH

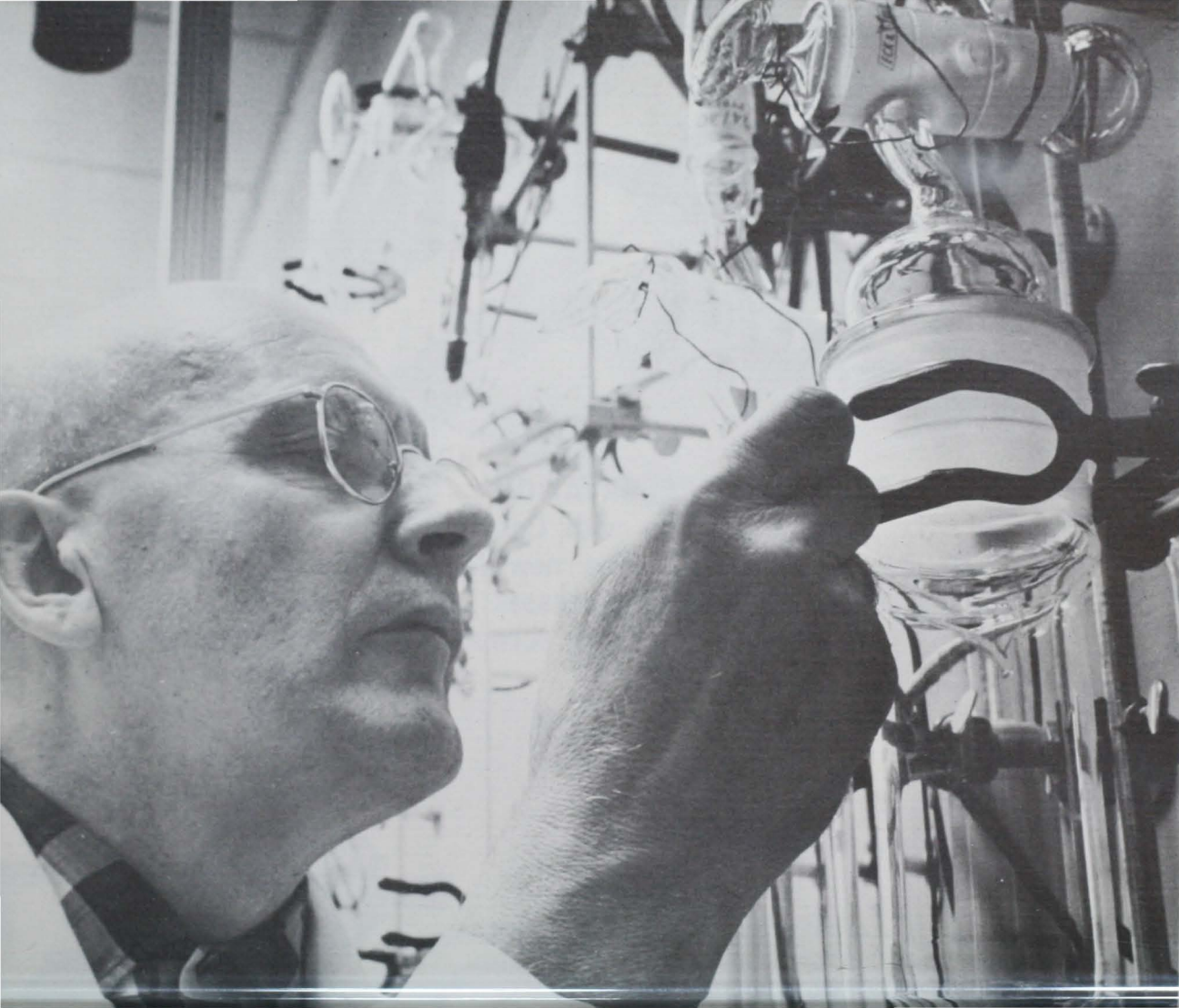
Scientists investigate the physical and chemical characteristics of fish proteins in order to preserve quality during freezing and storage. The consumer benefits from these studies by enjoying a fresher and more nutritious product.

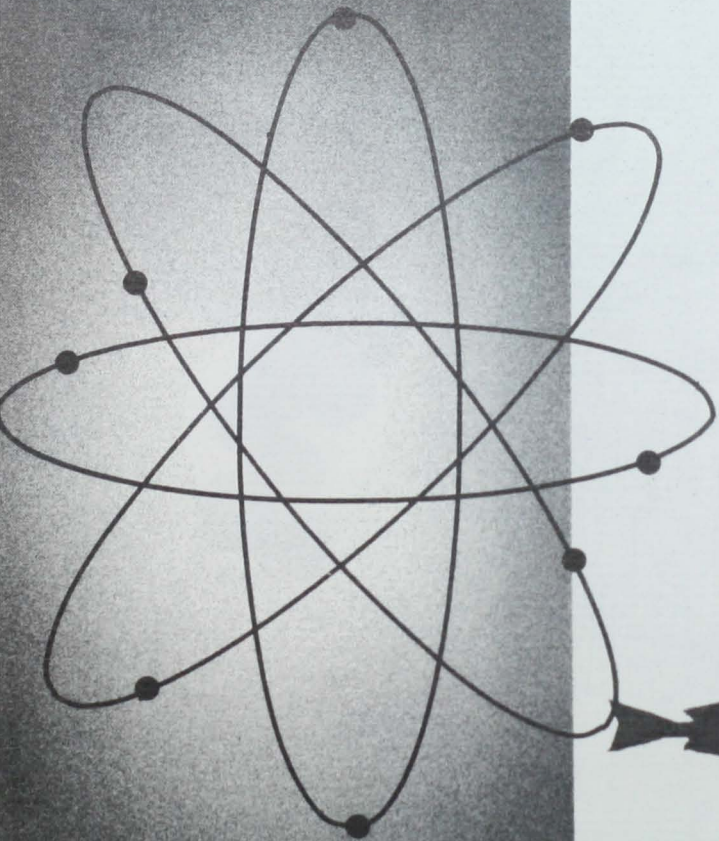


INFORMATION SERVICES

Bureau scientists answer questions and communicate their research findings to the fishing industry and to the scientific community. Questions on the research programs are always welcome.

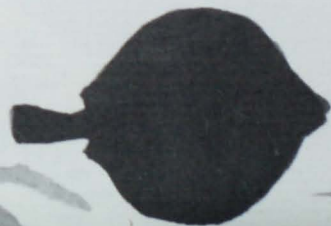
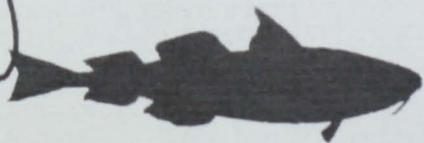






IRRADIATION PRESERVATION

Low-level irradiation with Cobalt-60 triples the normal shelf life of fresh fish. The new Marine Products Development Irradiator pilot plant processes 1,000 pounds of fish per hour to be used for consumer acceptability and distribution tests.



PACKAGED
PRODUCT

Co⁶⁰
RADIATION SOURCE

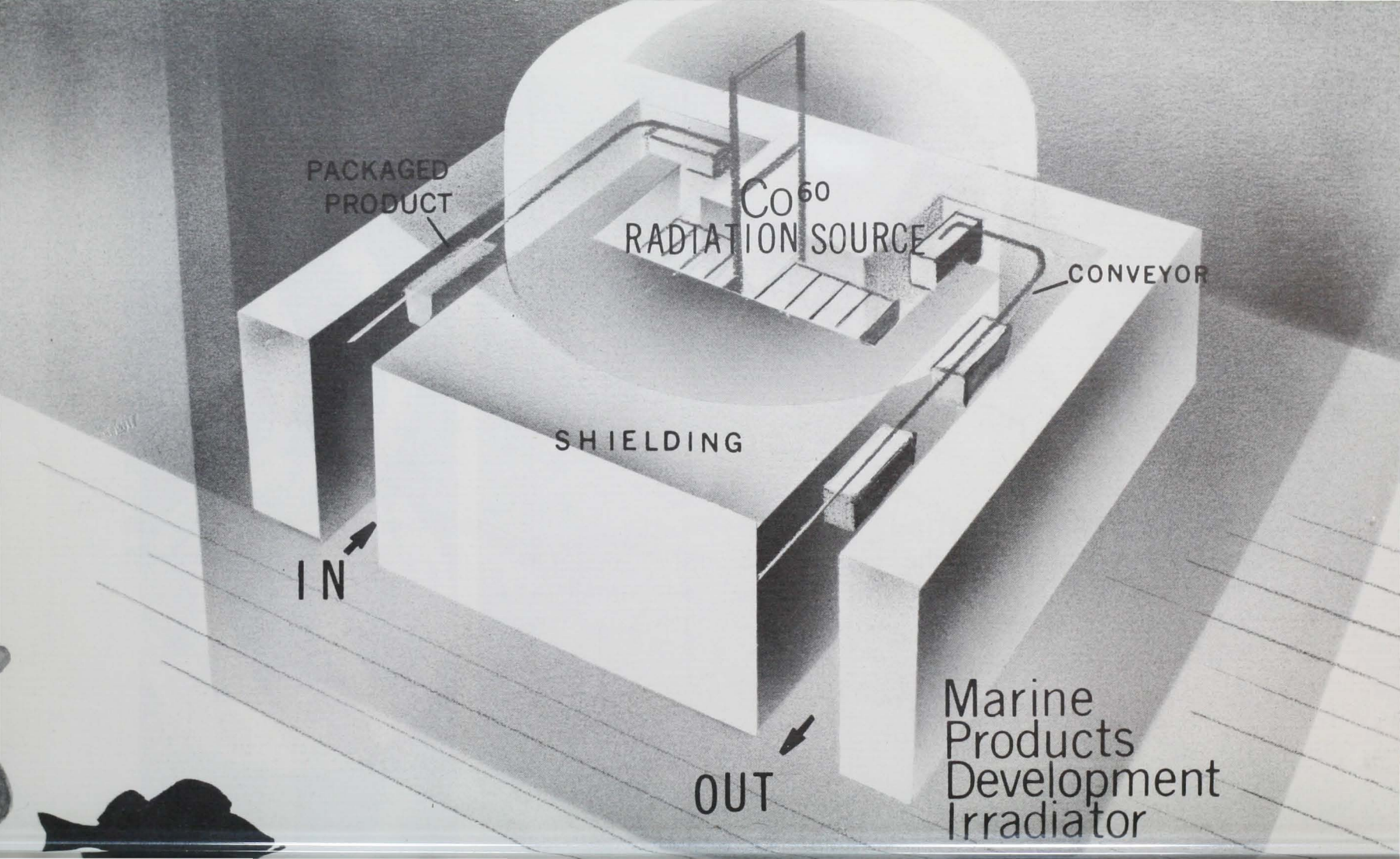
CONVEYOR

SHIELDING

IN

OUT

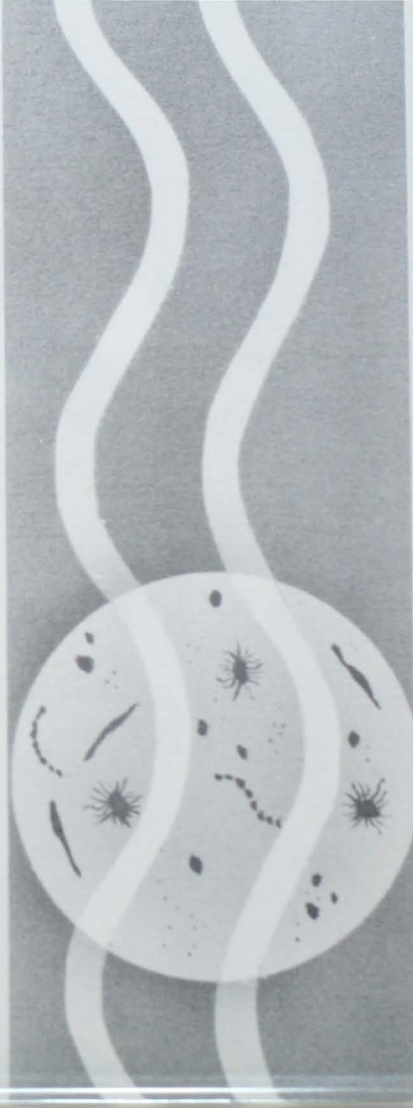
Marine
Products
Development
Irradiator





RADIATION PASTEURIZATION

Low-level irradiation has the same effect on fish that pasteurization has on milk. Fish that has been irradiated, therefore, can be easily distributed over a much larger area than can ordinary fresh iced fish.



FLAVOR AND ODOR RESEARCH

Gas chromatography and mass spectrometry are used to isolate and identify the sources of odor and flavor in fish. An understanding of the chemistry of flavor and odor changes will help scientists to control the loss of flavor by fresh fish. It may even enable them to add a fresh-from-the-sea flavor to canned and frozen fishery products.



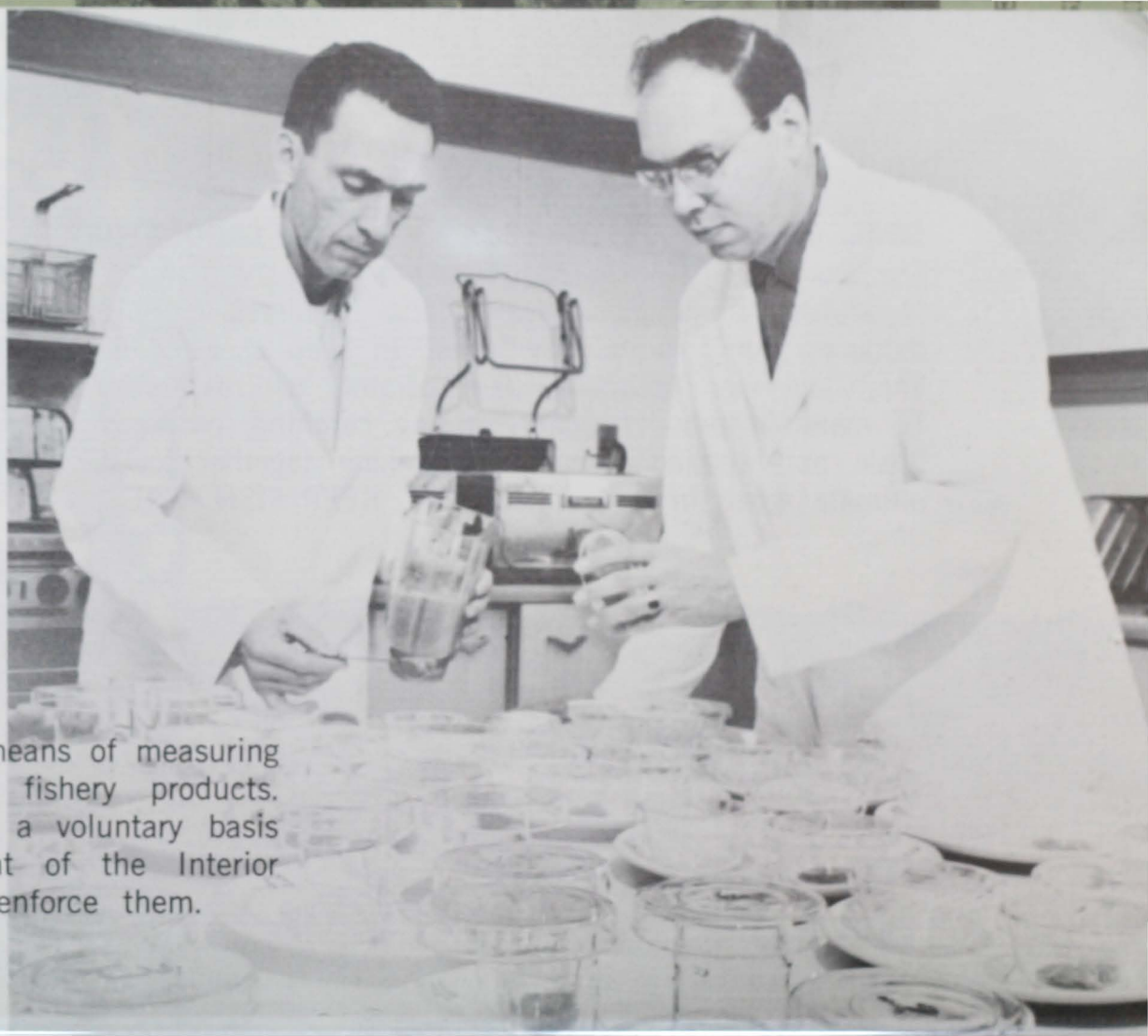


SPECIFICATIONS DEVELOPMENT

The use of specifications by purchasing agencies of the Federal and State governments, as well as by the Armed Services, assures these organizations of high-quality fishery products that conform to rigid flavor and odor standards.

STANDARDS DEVELOPMENT

Standards provide an objective means of measuring and improving the quality of fishery products. Industry uses the standards on a voluntary basis and employs U. S. Department of the Interior Fishery Products Inspectors to enforce them.



GOAL OF GLOUCESTER TECHNOLOGICAL LABORATORY

The Bureau of Commercial Fisheries aids the fishing industry of the United States to utilize our nation's vast aquatic resources more effectively by helping to solve problems that this industry faces. In keeping with the responsibility of the Bureau, The Gloucester Technological Laboratory utilizes its resources toward a single goal: To maintain product quality during catching, processing, distributing, and marketing. Basic and applied researchers working together toward this problem, express their ultimate goal in one phase—TO KEEP FISH FRESH.

Joseph W. Slavin
Joseph W. Slavin, DIRECTOR

Created in 1849 the Department of the Interior--a department of conservation--is concerned with the management, conservation, and development of the Nation's water, fish, wildlife, mineral, forest, and park and recreational resources. It also has major responsibilities for Indian and Territorial affairs.

As the Nation's principal conservation agency, the Department works to assure that nonrenewable resources are developed and used wisely, that park and recreational resources are conserved for the future, and that renewable resources make their full contribution to the progress, prosperity, and security of the United States--now and in the future.



**THE UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES**

