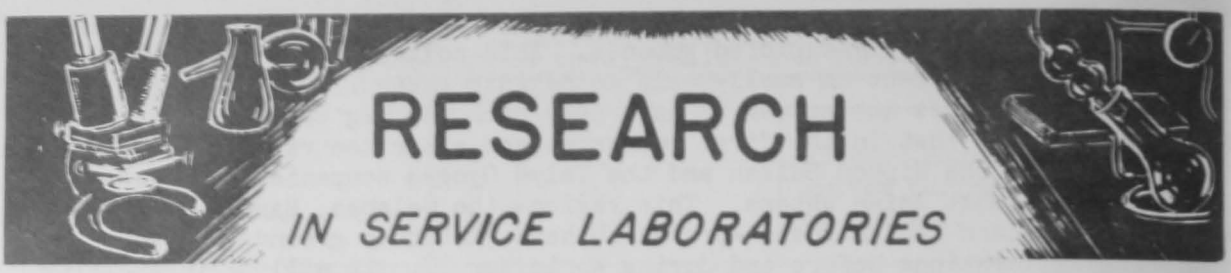

Progress on Projects, October 1952

ANALYSIS AND COMPOSITION: Composition and Cold-Storage Life of Fresh-Water Fish: The proximate composition of 16 sheepshead and 6 bullhead was determined. The sheepshead were caught in Lake Erie in June 1952; the bullhead in Lake Benton, Minnesota, in August 1952. The results are presented in the following table:

Composition of Edible Portion of Sheepshead and Bullhead

Species	Sample No.	Length	Weight	Fillet Yield 1/	Proximate Composition			
					Moisture	Fat	Protein	Ash
		Centimeters	Grams	Percent	Percent	Percent	Percent	Percent
Sheepshead (Aplodinotus grunniens)	1	29.0	325	29.2	74.7	6.0	17.4	1.0
	2	29.0	346	26.0	77.1	5.7	17.6	1.1
	3	32.0	427	27.6	77.0	4.9	18.1	1.0
	4	41.0	802	18.0	79.3	2.2	16.6	1.2
	5	33.0	520	26.0	72.6	10.3	16.8	1.0
	6	39.0	737	25.0	74.0	8.1	16.8	1.0
	7	37.0	687	28.7	74.2	8.1	16.3	1.0
	8	37.0	606	29.7	73.4	8.3	17.6	1.2
	9	36.0	595	28.4	73.6	8.9	16.9	1.2
	10	34.0	475	26.7	76.3	4.5	17.8	1.1
	11	39.0	663	22.3	74.3	8.6	17.6	1.0
	12	40.0	919	24.0	75.1	6.2	17.1	1.1
	13	44.0	1105	23.1	75.6	7.8	17.4	1.0
	14	44.0	1090	24.0	79.5	3.2	17.0	1.1
	15	42.0	935	24.6	75.7	8.2	16.3	1.0
	16	38.0	774	30.0	73.5	9.7	17.4	1.0
Bullhead (Ameiurus melas melas)	1	26.0	287	24.4	79.0	4.4	16.2	1.0
	2	25.5	290	21.0	79.7	2.7	16.4	1.0
	3	26.5	292	21.2	80.2	2.6	16.3	1.0
	4	28.0	300	26.7	81.6	1.9	16.3	1.0
	5	26.0	312	20.0	81.1	1.1	15.9	1.0
	6	25.0	220	16.0	80.7	1.1	16.7	1.0

1/ BASED ON WHOLE FISH.

(Seattle)

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REFRIGERATION: Freezing Fish at Sea, Defrosting, Filleting, and Refreezing the Fillets: The experimental research trawler Delaware completed Test Cruises Nos. 16 and 17. On Cruise No. 16 about 20,000 pounds of scrod haddock were caught on Georges Bank. One-half of the catch was frozen round in a new test-freezing medium, consisting of a magnesium-chloride solution at temperatures ranging from -10° F. to -5° F. These fish froze in about one-half the time required in previous tests when a sodium-chloride solution was used at 2° F. to 7° F. The remainder of the catch was gutted and iced in the vessel's hold, and will be used for comparative tests. All this fish will be used for experimental purposes to determine the ef-

fect of the new freezing medium (magnesium-chloride solution) on the color, texture, taste, and storage characteristics of the fish.

On Cruise No. 17, approximately 28,500 pounds of scrod haddock and 4,000 pounds of haddock were caught on Georges Bank. About 23,000 pounds of scrod haddock were frozen round in brine (sodium chloride) at 3° F. to 8° F. The remainder was gutted and stored on ice in the hold of the Delaware. All fish from the cruise were sold through the New England Fish Exchange at the Boston Fish Pier to provide interested firms with samples of fish frozen at sea and fish iced at sea for comparative tests.

This completes the fishing activities of the Delaware until about March 1953. Limitation of funds preclude further sea operations at this time. The interim period will, however, afford opportunity for laboratory personnel to pursue more diligently the laboratory and pilot-plant phases of the project; to design and install an improved brine freezer; and to improve the operation of the refrigeration equipment, which up to now has operated at about one-half the rated capacity. Further overhauling and repairing of the vessel and fishing equipment will also be carried out.

(Boston)

Technological Program Changes

A technological survey of the domestic tuna industry is a new project delegated to the Seattle laboratory. This project is one phase of a comprehensive study by the Service's Branch of Commercial Fisheries of the current and possible future condition of the domestic tuna industry. The over-all study is expected to provide recommendations for such measures as may be appropriate to promote necessary adjustments of the tuna industry so that it may achieve and maintain a sound position in the domestic economy. The technological study will be confined to plant-survey work. For future reference purposes this project will be entitled Tuna Survey--Technological Phase. Completion of the field work involved has been set for December 15, 1952.

Three technologists have been assigned to the project; two from the Seattle laboratory staff and one hired on a temporary basis. Current technological studies by these members of the Seattle laboratory will be delayed until completion of the survey.

STUDIES OF BACTERIOLOGICAL AGAR

During World War II, all agar was reserved for scientific purposes, principally bacteriological. This was necessitated by the shortage caused when we could no longer receive imports from Japan which had supplied 92 percent of our agar. To help alleviate this condition, the U. S. Fish and Wildlife Service undertook an investigation of the properties of agar and agar substitutes relating to their use for bacteriological purposes.

The results of this investigation were published in Fishery Leaflet 335, Studies of Bacteriological Agar. This publication consists of two parts: Part I - Physical and Chemical Properties; Part II - Bacteriological Studies.

--Fishery Leaflet 335