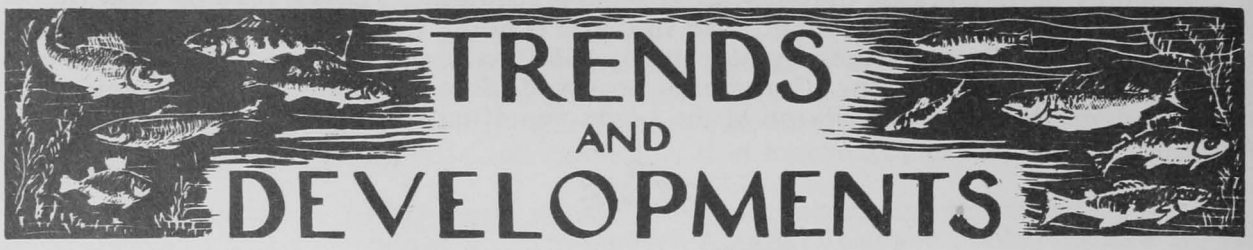


Additions to U. S. Fleet of Fishing Vessels

DECEMBER 1955: In December 1955 a total of 16 vessels of 5 net tons and over were issued first documents as fishing craft, according to the Bureau of Customs. This was 7 vessels less than in the corresponding month of 1954.

During December, the Gulf area led with 6 newly-documented fishing vessels, followed by the Pacific area with 5, the Chesapeake area with 3, and the South Atlantic States and the Virgin Islands with 1 each.

YEAR 1955: A total of 418 vessels was documented for the first time as fishing craft during 1955, compared with 717 during 1954--a decrease of 42 percent. The greatest decline in newly-documented fishing craft during 1955 occurred in the South Atlantic and Gulf areas where the decreases amounted to 45 percent and 67 percent, respectively. These declines were primarily due to a reduction in the number of newly-documented craft entering the shrimp fishery.

Table 1 - U. S. Vessels Issued First Documents as Fishing Craft, December 1955 and Year 1955 with Comparisons

Area	December		Annual Totals			
	1955	1954	1955	1954	1953	1952
	(Number)					
New England ..	-	1	18	23	20	30
Middle Atlantic	-	-	13	15	19	26
Chesapeake . .	3	2	54	93	83	65
South Atlantic .	1	5	65	119	116	89
Gulf	6	7	103	313	264	161
Pacific	5	6	117	117	164	203
Great Lakes . .	-	1	9	6	7	13
Alaska	-	1	35	27	53	88
Hawaii	-	-	3	1	3	-
Puerto Rico . .	-	-	-	2	-	-
Virgin Islands .	1	-	1	-	-	-
Unknown	-	-	-	1	-	-
Total . . .	16	23	418	717	729	675

Note: A vessel is assigned to the area in which its registered home port is located.

Table 2 - U. S. Vessels Issued First Documents as Fishing Craft, 1938-55

Year	Number	Year	Number
1955	418	1946	1,085
1954	717	1945	741
1953	729	1944	635
1952	675	1943	358
1951	780	1942	358
1950	812	1941	354
1949	1,002	1940	320
1948	1,184	1939 1/	357
1947	1,300	1938 1/	376

1/ Data partly estimated.

During the 18-year period (1938-1955), 12,201 vessels were issued first documents as fishing craft. Between 1946 and 1949 inclusive, 4,571 fishing vessels were documented for the first time--37 percent of the 18-year total. Most of these vessels were registered in the South Atlantic and Gulf areas, which reflected the very large expansion of the shrimp fishery that took place immediately following World War II. Following this expansion brought on by the increased popularity of shrimp, the number of newly-documented craft entering the fisheries has steadily declined each year to approximately prewar levels.

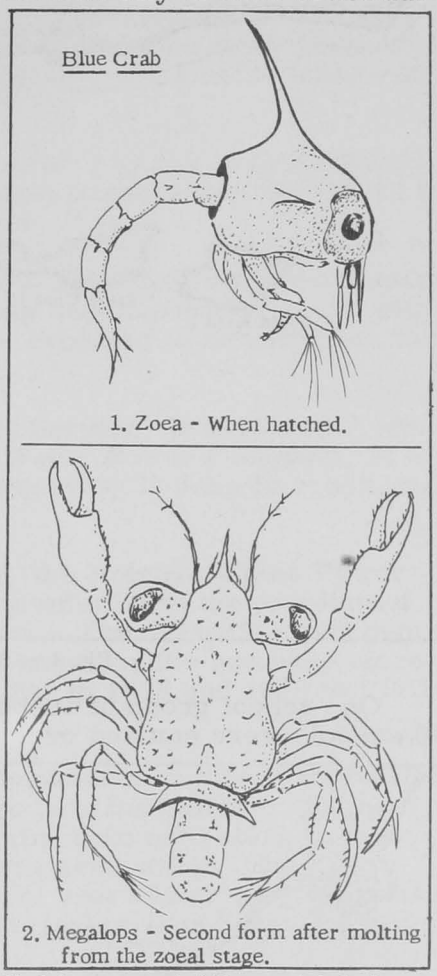
Atlantic Coast Blue Crab Research Objectivies Defined

The erratic fluctuations in commercial abundance of crabs cause widespread marketing difficulties for crabs and crab products. The scarcity of blue crabs during the early part of 1955 focused attention on the serious declines that are detrimental to the crab fishery.

To meet this challenge, a joint meeting of the Chesapeake and South Atlantic Sections of the Atlantic States Marine Fisheries Commission was called to provide for collective thinking on a coastwise research program on the abundance of stocks of blue crabs.

The primary objective of the program is to provide the industry, indirectly, with the highest stable level of production we can achieve without endangering future crops. The primary questions to be answered deal with hatching, recruitment, mortality, as they effect the abundance of the blue crab resource. Long-range measures of hatch can include: (1) the number of eggs produced by each spawner; (2) the abundance of spawners required to continue the population; (3) numbers of young and larval stages.

Recruitment is the addition of crabs to the fishery from a maturing year-class or by immigration of adults into the fishery from another area. It can also be measured by obtaining good catch records of the peeler-crab scrape fishery so that an estimate might be made of a relative year-class strength. Abundance is best indicated by calculating the average number of crabs a man catches per day, or possibly by estimating the size of the population through tagging. There are many factors that affect the mortality of crabs from the egg through the adult stages. Natural mortality, which is difficult to measure, and fishing mortality, which is more easily estimated, constitute the major means of reducing population.



1. Zoea - When hatched.

2. Megalops - Second form after molting from the zoeal stage.

The Committee concerned with blue crab research is composed of industry members and representatives from federal and state fishery agencies from Delaware to Florida. Both Maryland and Virginia will continue to carry on a major share of the program in the Chesapeake Bay area where the crab is of such great importance, reports the Maryland Tidewater News, a publication of Maryland's Department of Research and Education.

California

PELAGIC FISH DISTRIBUTION AND BEHAVIOR STUDY STARTED (Airplane Spotting Flight 56-1): The first of a series of periodic flights designed to study pelagic fish distribution and behavior in 1956 took place January 17-19. The California Department of Fish and Game Cessna "170" 1359D was used for the airplane spotting.

No fish schools were observed in the area between Monterey and San Francisco on January 17, and none were seen in the area between Monterey and Santa Barbara on the 18th.

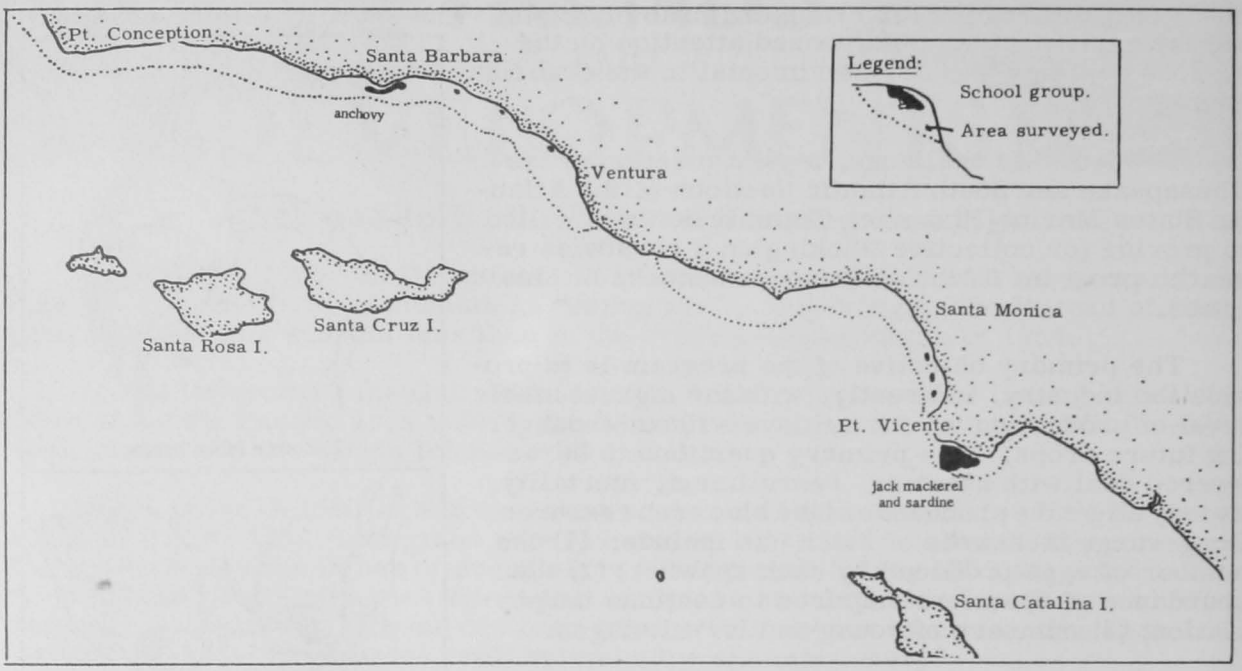


Fig. 1 - Airplane Spotting Flight 56-1, January 18, 1956.

One school group of anchovies was sighted near Santa Barbara on the 18th where 40 schools were counted over a distance of about eight miles along the beach. All the fish in this area were within $\frac{1}{2}$ mile of the shoreline. Bait-boat operators working in this area reported these schools to be of small anchovies 4 to 5 inches in total length. Smaller groups of anchovies were also observed in the Santa Monica, Del Mar, and San Diego areas.

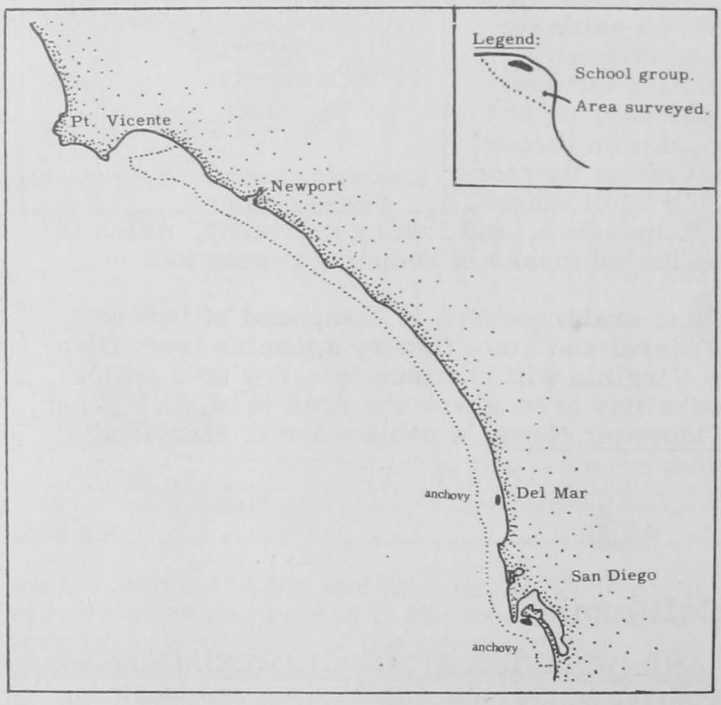


Fig. 2 - Airplane Spotting Flight 56-1, January 19, 1956.

One school group of mixed sardines and small jack mackerel was sighted between Pt. Vicente and Pt. Fermin. Good coverage of this school group was not possible due to the thick haze present in the atmosphere. These mixed schools were very deep in the water and could not be identified from the air, but fortunately the commercial fleet was working the area during the previous night and samples of these fish were observed.

A total of 42 basking sharks were sighted in the area between Santa Barbara and Ventura and 14 California gray whales were sighted from Montery Bay to San Diego.

Conservation Award to Power Company for Development of a Shad Fishway

Secretary of the Interior Douglas McKay announced February 1 that a Department of the Interior's Conservation Service Award was to be made to the Holyoke Water Power Company, of Holyoke, Mass., "in recognition of its outstanding service in the field of conservation of natural resources."

The award is based upon six years of persistent efforts by the Holyoke Water Power Company to develop and construct a workable fish passage facility for shad at the South Hadley Falls Dam on the Connecticut River.

As the result of the Company's interest in conservation, this newly-developed fishway has succeeded in reopening a fishery which has been closed for more than a century. Both sport and commercial fishermen are expected to benefit from the reestablishment of the shad fishery in that area.

John L. Farley, Director of the Fish and Wildlife Service, presented the award to Robert E. Barrett, Jr., President of the Holyoke Water Power Company, at the annual dinner of Wildlife Conservation, Inc., on February 3, in John Hancock Hall, Boston, Mass.

In cooperation with the Fish and Wildlife Service, the Holyoke Water Power Company has worked since 1949 to seek a satisfactory solution to the problem of shad passage at the Company's South Hadley Falls Dam. The difficulties encountered in attempting to pass shad over the dam were well known to the company since two earlier fishways which it had constructed on the site in 1873 and 1940 had failed in their purpose.

The Connecticut River had salmon and shad in tremendous numbers in the 18th century. The Indians used the shad and the white men took the salmon. Salmon fishing ended about 1800 when a dam was erected. Salmon do not return to their spawning grounds if they are denied access to it for one generation. Shad, however, do return and after the dam was removed several years later they again used the upper reaches of the river for spawning, and shad fishing soon became a big business.

But, as the years passed, industrialization along the North Atlantic coastal rivers resulted in water pollution and the erection of dams which restricted the passage of migratory fish. Conservationists freely predicted the end of a great natural resource. Fish ladders were built consisting of a series of ascending pools in the form of watery staircases, but the shad did not use them. Variations of the ladders were tried without success.

In 1949, under the terms of a license issued by the Federal Power Commission for the erection of a hydroelectric station at the dam, the Holyoke Water Power Company agreed to provide satisfactory fish-passage facilities at their dam.

To achieve a fully functional fishway device, the Company decided to base their studies upon the habits and peculiarities of the shad. A Company engineer was assigned to work closely with Service representatives. In December 1949 this engineer was sent to the West Coast, at company expense, to study fish-passage facilities in that region.

During the summer of 1950, the Company participated in fishway model studies conducted at the Alden Hydraulic Laboratory of Worcester Polytechnic Institute in Worcester, Mass. This study was established to make determinations on the hydraulic conditions which would prevail at the fishway and to test the reactions of fish to these conditions.

In 1952 a new fishway began operation. Although certain features operated most successfully, the fishway failed to pass many shad during its first three years of operation.

At this point the Company had more than performed the obligations imposed by the terms of the Federal Power Commission license. But, in the interests of conservation, the Company decided to continue its efforts to produce a more satisfactory fish-passage device.

During the spring of 1955, Company officials designed and installed a new automatic hopper device. This device proved to be successful and nearly 5,000 shad were lifted over the Holyoke Dam. For the first time in 107 years, considerable numbers of shad reached their ancestral spawning grounds.

In recognition of this significant accomplishment, Fish and Wildlife Service officials nominated the Holyoke Water Power Company for the Department's Conservation Service Award.

Federal Purchases of Fishery Products

FRESH AND FROZEN FISHERY PRODUCTS PURCHASED BY DEPARTMENT OF DEFENSE, DECEMBER 1955: For the military feeding of the U. S. Army, Navy, Marine Corps, and Air Force, the Army Quartermaster Corps in December 1955 purchased fresh and frozen fishery products amounting to 1.8 million pounds, valued at $897,308 (see table). This was a decrease of 8.3 percent in quantity, but an increase of 4.5 percent in value as compared with November 1955. Compared with December 1954, the purchases in December 1955 were 10.9 percent less in quantity, but 10.1 percent greater in value. The higher value and the smaller quantity indicates that higher-priced products were purchased in December 1955 than in the previous month and the same month a year earlier.

Purchases of Fresh and Frozen Fishery Products by Department of Defense (December and 12 Months of 1955 with Comparisons

QUANTITY				VALUE			
December		Jan.-Dec.		December		Jan.-Dec.	
1955	1954	1955	1954	1955	1954	1955	1954
(Millions of Pounds)				(Millions of $)			
1.8	2.0	25.0	25.3	0.9	0.8	10.9	10.4

Quartermaster Corps purchases of fresh and frozen fishery products for the year 1955 totaled slightly less than 25.0 million pounds (valued at $10.9 million), 1.2 percent less in quantity, but 5.1 percent higher in value than for 1954.

Prices paid for fresh and frozen fishery products paid by the Quartermaster Corps in December 1955 averaged 50.2 cents a pound as compared with 40.6 cents a pound in the same month in 1954. The 1955 average annual price for all fresh and frozen fishery products purchased was 43.7 cents a pound as compared with the 1954 annual average price of 41.1 cents a pound.

In addition to the purchases of fresh and frozen fishery products indicated, the Armed Forces generally make some local purchases which are not included in the data given above. Therefore, actual purchases are somewhat higher than indicated, but it is not possible to obtain data on the local purchases made by military installations throughout the country.

Florida

UNIVERSITY ORGANIZES CLUB TO TEACH COMMERCIAL FISHING TO BOYS: The Director of the Marine Laboratory, University of Miami, reports the organization of a club at Fort Myers, Fla., to teach high school boys the trade of fishing. This will be on the order of the 4H clubs among farm boys and will teach fishing, net mending, navigation, boat handling, technology, area to fish, accounting, etc. According to present plans the club will be run by a coordinator from the University who will work in his spare time along with a volunteer worker at Ft. Myers. If successful, the effort will be expanded to other areas in Florida. An expenditure of $1,000 has been authorized to get the club started. This is for the purchase of equipment and no salaries will be paid. Continuation of the program past the first year and its expansion to other areas will depend upon the raising of funds.

There has long been a need to teach American youth the principles of fishing and to encourage them in making fishing a career.

Great Lakes Fishery Investigations

SEA LAMPREY POISON SEARCH NEARS CLOSE: The search for a poison which can kill larvae of sea lampreys without injuring desirable species of fish is drawing toward a successful conclusion, but additional testing must be made before a definite statement of success can be made.

The poison, specific to lampreys and harmless to other fish, will be used in connection with electrical devices which have already been proved and have been installed at various points in the Great Lakes in a double-barreled attack on the parasitic sea lamprey which has moved into the Great Lakes with such disastrous results to commercial fishing.

The electrical devices block the lamprey from ascending to spawning grounds in the tributaries of the lakes. The poison, if it lives up to expectations, will kill the five generations of lamprey larvae which live in the mud bottoms of the streams. Adult lampreys, attempting to reach spawning grounds, will be killed by the electrical devices.

About 5,000 poisons have been tested in the search for one which is specific for lampreys. Several poisons have been found which give excellent results in many tests in which lamprey larvae and fish have been treated under identical laboratory conditions. These selective poisons are undergoing extensive testing before field trials to make doubly sure that they will not be harmful to desirable fish, to game, or to man in concentrations at which they will kill lamprey larvae.

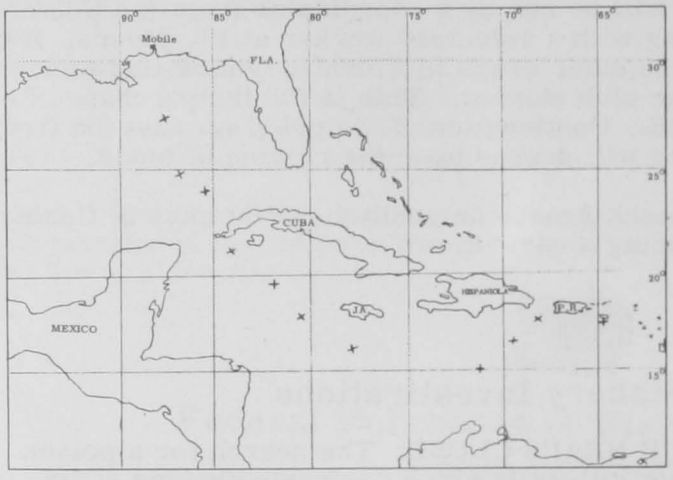
All United States streams tributary to Lake Superior known to have lamprey spawning areas have been blocked by the electrical devices. Canada is well along on its part of the program and will have the task completed in 1957. At present there are 72 electrical barriers operating on Lake Superior.

Lake Michigan fishing has already been disastrously hit by the sea lamprey. Recent test gill-netting indicated that lake trout have practically been eliminated in that body of water since the influx of sea lamprey a few years ago.

During the search for a lamprey poison the U.S. Fish and Wildlife Service uncovered many promising leads for the development of other selective fish poisons which can be used in fish management. It is expected that additional work along this line will open up some entirely new approaches to fish population control.

Gulf Exploratory Fishery Program

SMALL CATCH OF TUNA REPORTED BY "OREGON" ON 27-DAY TRIP (Cruise 35): Generally poor fishing was reported during a 27-day exploratory tuna cruise (January 1956) through the north central Caribbean and central Gulf of Mexico by the Service's exploratory fishing vessel Oregon. Four 100-basket (1,000 hooks) and seven 50-basket (500 hooks) stations were fished. Heavy seas restricted the amount of gear that could be set at several stations. The total catch yielded 29 yellowfin tuna weighing 3,654 pounds (average of 126 pounds per fish) and 19 albacore weighing 969 pounds (average 51 pounds per fish). Catch rates for these two species varied from 0 to 1.8 fish per 100 hooks and averaged 0.6 per 100 hooks. One yellowfin was shark bitten.



Location of long-line stations (X) fished during Cruise 35 by the Oregon.

All live yellowfin (16), blue marlin (3), and white marlin (3) were tagged and released in cooperation with the Woods Hole Oceanographic Institution. In addition, 1 skipjack, 2 broadbill swordfish, 3 spearfish, 6 blue marlin, 5 white marlin, 22 white-tip and silk sharks, 9 dolphin, and one 353-pound bluefin tuna were caught, the latter in the north central Gulf. The albacore were all caught east of Jamaica. Catch rates for all species were very low from west of Jamaica to the central Gulf.

Prior to fishing operations, 21 tons of yellowfin tuna caught by the Oregon last August were delivered to Ponce, Puerto Rico, for canning. Approximately $6\frac{1}{2}$ tons were rejected as off-color and unsuitable for a commercial pack.

A port call was made at San Juan, P. R., on January 19 for repairs to the long-line hauler.

The Oregon started on this cruise on January 5, 1956, from Pascagoula, Miss., and the vessel returned to that port early in February.

The Oregon was scheduled to depart from Pascagoula on February 15 to conduct two weeks of commercial-scale trawling for deep-water red shrimp off the coasts of Mississippi, Alabama, and western Florida. Night-time trawling in the 200- to 250-fathom depth range in this area last fall yielded catch rates of up to 770 pounds per night, using 74-foot balloon trawls.

Maine

CANNED MAINE SARDINE STOCKS, JANUARY 1, 1956: Distributors' stocks of Maine sardines amounted to 326,000 actual cases as of January 1, 1956, a decrease of 28,000 cases since November 1, 1955, when they were last measured. Comparable data for a year earlier are not available.

Canners' stocks amounted to 475,000 standard cases (100-$3\frac{1}{4}$ oz. cans) on January 1, 1956, according to estimates based on the results of the second in a series of five measurements for the 1955/56 marketing season by the U. S. Bureau of Cen-

sus. Canners' stocks on January 1, 1955, as reported by the Maine Sardine Industry, were 1,239,000 standard cases. Canners' stocks on January 1 this year were 62 percent less than on the same date in 1955, which reflects the lighter pack in 1955. From November 1, 1955, to January 1, 1956, canners' stocks dropped 150,000 standard cases.

Maine Sardines--Wholesale Distributors' and Canners' Stocks, January 1, 1956, with Comparisons

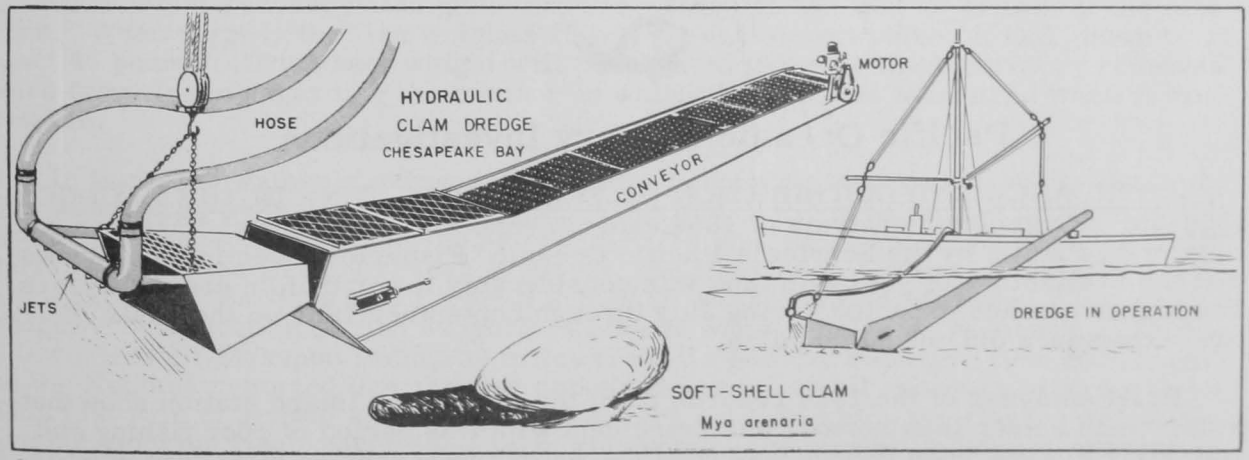
Type of Stocks	Unit	1955/56 Season		1954/55 Season				
		1/1/56	11/1/55	7/1/55	6/1/55	4/1/55	1/1/55	11/1/54
Distributors	1,000 actual cases	326	354	235	n.a.	331	n.a.	n.a.
Canners	1,000 actual cases	475	625	723	575	715	1,239	1,410

n.a. - Not available.

The total available canners' supply (carryover plus pack) for the 1955/56 season was 1,945,000 standard cases as compared with the previous season's supply of 2,875,000 cases. Shipments from April 15, 1955, to January 1, 1956, totaled 1,470,000 standard cases as compared with 1,636,000 cases for the same period a year earlier.

Maryland

NEW SOFT CLAM INDUSTRY AND RESEARCH PROGRAM: The Fishery: Maryland's Chesapeake Bay fishery for soft clams (Mya arenaria) has grown steadily since development of the hydraulic clam dredge, according to the December 1955 Maryland Tidewater News, a publication of the State's Department of Research and Education. During 1950-54 the number of licensed dredgers increased from 1 to 33. Since enactment of legislation regulating the fishery, effective June 1, 1955, the number of dredge boats licensed in Queen Anne's, Talbot, and Calvert Counties



has increased from 48 to 77. Concurrent legislation prohibited use of the hydraulic dredge in the counties of Anne Arundel, Dorchester, Wicomico, Somerset, and St. Mary's several of which are believed to have clam populations of potential commercial importance.

Current production is estimated at from 10,000 to 15,000 bushels a month, worth from $4 to $6 a bushel to the dredgers and averaging about $8 a bushel in

the wholesale markets of New York and New England. The product is handled by 23 licensed dealers, of whom 6 are from Massachusetts, 3 from New Jersey, and 1 each from New York, Rhode Island, Connecticut, and Maine. Of the ten Maryland dealers, only one shucks clams, the others acting chiefly as reshippers, since local demand for the product is almost negligible. The gross annual value of the fishery is estimated at about $1,250,000. Capital investment exceeds $350,000.

Research Program: Expansion of the industry has been accompanied by a great deal of controversy concerning the effects of hydraulic dredging on resources of economic importance. Unfortunately, very little was or is known of the biology of the soft-shell clam in Maryland waters, and prediction of the effects of a new gear can only be conjectural. The Department of Research and Education began a limited program of investigation in 1954, some results of which have already been published. It has been demonstrated that soft clams grow very rapidly in Maryland, reaching the legal minimum length of two inches in 18 months or less, and that the life cycle is much shorter than that of the same species in New England. The breakage rate in harvesting with the hydraulic dredge has been shown to be less than 25 percent of that associated with hand digging. Something has been learned of the distribution and abundance of the species, the time of spawning and setting, and factors of natural mortality.

With the tax-supported research fund established by the legislature in 1955 and now available to the Department, the research program is being expanded. First priority is given to a study of the effects of hydraulic dredging on the physical structure of the bottom and the productivity of shoal areas in terms of sedentary animals and suitability as a habitat for water fowl, forage fish, and crustaceans. Studies of distribution and abundance, replacement potential, annual cycle of condition, and the effects of temperature, salinity, and turbidity on pumping rates of the clam are in progress. An attempt is being made to set up a statistical program for the fishery.

The research program is designed to provide answers to the most urgent questions that have been asked by management authorities, groups having financial interests in other estuarine resources, sportsmen's organizations, and public health agencies. Time is required for reaching the objectives of such investigations. However, it is believed likely that management of the soft-shell clam industry will be based on the results of research.

Pacific Oceanic Fishery Investigations

ABUNDANCE AND DISTRIBUTION OF EQUATORIAL TUNA IN THE PACIFIC, 1954-55: A completed analysis of 1954 experimental and commercial fishing in the equatorial Pacific by the Service's Pacific Oceanic Fisheries Investigations shows that the availability of yellowfin tuna was considerably lower than in previous years. The higher catches expected during July through September 1954 on the basis of past experience did not materialize.

Brief analyses of the 1954 records from the Christmas Island station show that water much colder than normal was coincident with this period of poor fishing and that early in 1954 when fishing was good the water temperatures were approximately normal. It is probable that these changes in temperature are associated with the vigor of the equatorial upwelling system. It is assumed that very cold water is the result of strong upwelling and that this water has not been in the mixing zone long enough to develop a population of tuna-forage organisms. Thus the cold water cannot support a strikingly large population of tuna.

The year-round sampling program, begun in March 1955 to describe the population changes during a year in the Line Islands region, was continued. The abundance of tuna in 1955 continued to be as low as it was during the last part of 1954, and along with this relatively poor fishing in 1955 the water is strikingly cold, at least when compared to temperatures that prevailed during the period 1950-54. In fact, during December 1955, temperatures as low as 75° F. were encountered in a region that is typically 78°-82° F. Incidental to the sampling program, 900 yellowfin tuna were tagged and released.

* * * * *

TAGGED TUNA RECOVERIES INDICATE EXTENSIVE MIGRATION AND RAPID GROWTH: Two recent recoveries of tagged tuna, one an albacore and the other a skipjack (aku), have contributed materially towards the understanding of the migration and growth of these fish, according to a February 6 news release by the Service's Pacific Oceanic Fishery Investigations.

An albacore which was tagged by the Investigations' research vessel, the John R. Manning, on October 5, 1954, at a point 1,300 miles north of the Hawaiian Islands was recaptured by Japanese fishermen in the coastal waters of Japan. After 471 days of freedom the albacore, bearing a plastic tube tag which has the appearance of a piece of spaghetti, was recaptured on January 19, 1956, about 75 miles northeast of the entrance to Tokyo Bay. The fishermen immediately noticed the white "spaghetti" tag on the fish's back and returned it together with the length of the fish to the Honolulu laboratory.

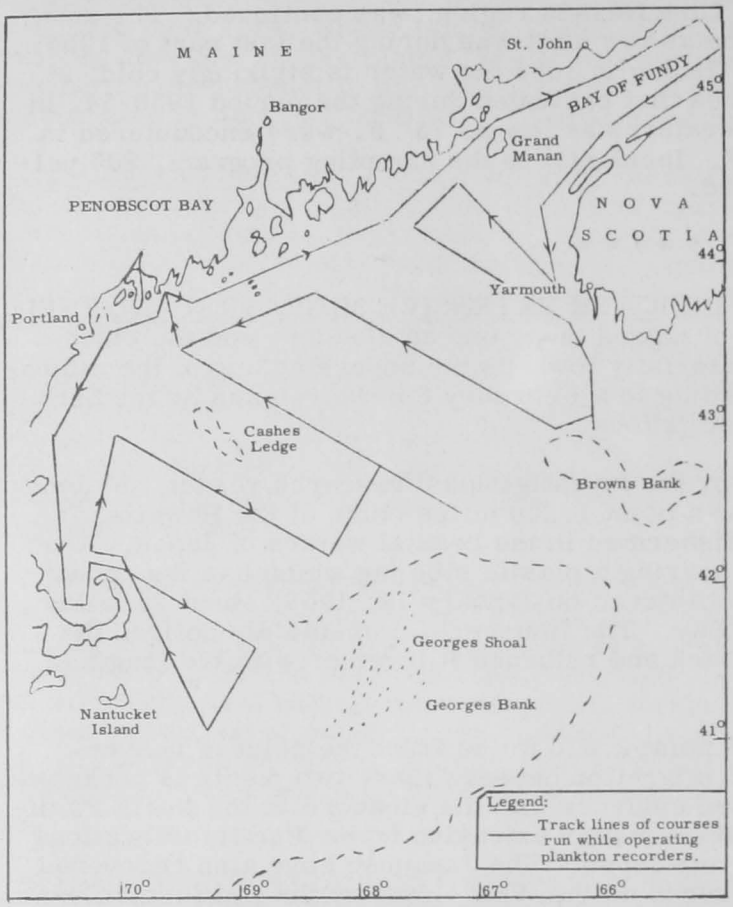
This albacore was retaken at a point 2,670 miles from the point of release, but, of course, the exact pattern of migration between these two points is not known. Nevertheless, this recovery is added evidence that the albacore in the North Pacific belong to one single population which makes extensive trans-Pacific migrations between the west coast of America and Japan. The Japanese have also recovered at least four albacore which were tagged on the West Coast by the California Department of Fish and Game. The albacore is a valuable fish for canning and is fished by both Japanese and United States fishermen on the two coasts, as well as in mid-ocean.

This latest recovery also gave direct evidence on the rate of growth of the albacore. When tagged, the fish weighed 15 pounds and at recapture, it had grown to at least 40 pounds. The exact weight will be determined after the laboratory receives word from Japan regarding the manner in which the fish was measured when it was retaken.

In Hawaiian waters a skipjack (aku), after carrying its tag around for 252 days, was recaptured by the sampan Neptune. This was the longest period between release and recapture of any of the aku recoveries thus far. This fish was tagged and released from the fishery research vessel, the Charles H. Gilbert, on May 25, 1955, a few miles off Barbers Point from a school in which the fish averaged 7 pounds in weight. The recaptured fish weighed 14 pounds when retaken on February 1, 1956, a few miles off Makapuu Point, 30 miles from its point of release. The fishermen on the Neptune reported that the fish appeared normal in all respects when captured. This fast rate of growth shows that the "season aku" on which the fishery depends are not very old fish. More long-term recoveries are needed, however, and the fishermen's continued cooperation is solicited by the researchers at the Pacific Oceanic Fishery Investigations laboratory.

Note: See Commercial Fisheries Review, February 1956, p. 25.

North Atlantic Herring Research



Theodore N. Gill, Cruise 10 (1/19-1/28/56).

ANOTHER PLANKTON SURVEY OF GULF OF MAINE ("THEODORE N. Gill," Cruise 10): A third plankton survey of the Gulf of Maine and some adjacent waters was made by the Service's research vessel Theodore N. Gill from January 19 to January 28, 1956. The purpose of this cruise was to further check the numbers and distribution of the developing herring young spawned during the 1955 season.

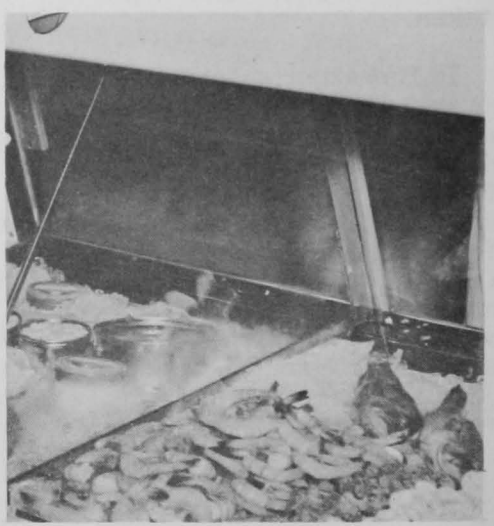
Two Hardy Continuous Plankton Samplers were towed at 9 knots speed, as in Cruises 8 and 9. One sampler was towed at the surface and the other 10 meters below the surface. A total of 12 plankton tows was made at 12-hour intervals with a one-meter silk-gauze net. Surface and subsurface temperature records were kept throughout the cruise. A total of 160 bathythermograph casts were made.

Shrimp Retail Sales Studied

America's penchant for shrimp, as reflected in the over-the-counter sales in the Nation's retail food stores, is portrayed by a study made by the U. S. Fish and Wildlife Service. This study on shrimp in the retail market is one of several which the Service is making in its comprehensive survey of the shrimp industry, the first such survey ever made in this field.

During the course of the comprehensive survey the Service will examine the potential market for shrimp products, the efficiency of the processing plants, primary marketing methods, work practices in shrimp fishing vessels, cost of vessel operations, and other matters pertaining to the production, preparation, and distribution of shrimp and shrimp products.

A review of the retail sales in August and September 1955 showed that during those months Americans were buying shrimp and shrimp products at the rate of more than 13 million pounds a month. Fresh and bulk-frozen shrimp were most



Fresh shrimp displayed in a retail cabinet.

popular, with consumers buying over the fish counter at the rate of nearly 7 million pounds a month. Packaged frozen shrimp and shrimp products were next in popularity with 5.4 million pounds coming out of the freezer display cabinets into the kitchens of the homes. Canned shrimp was third with monthly sales of 900,000 pounds. The total sales value was approximately $12 million per month with each class averaging as follows: fresh and bulk-frozen shrimp, $5.2 million; packaged frozen shrimp and shrimp products, $5.1 million; canned shrimp, $1.4 million.

The total retail inventory at that time was only 8 million pounds of shrimp of all classes. Of this 3 million pounds were fresh and bulk-frozen shrimp; 2.1 million pounds of frozen, uncooked; 0.6 million pounds of uncooked breaded; 1.8 million pounds of canned shrimp; 0.3 million pounds of frozen cooked breaded; and 0.2 million pounds of miscellaneous shrimp products.

The retail trade study of the comprehensive survey is being made by the A. C. Nielsen Company of New York and Chicago. It is being done on the basis of a reliable sample of the 413,000 retail food stores in the United States.

The project is financed by funds provided by the Saltonstall-Kennedy Act which was passed in 1954.

U. S. Foreign Trade

EDIBLE FISHERY PRODUCTS, NOVEMBER 1955: United States imports of fresh, frozen, and processed edible fish and shellfish in November 1955 totaled 71.5 million pounds (valued at $20.5 million), according to a Department of Commerce summary tabulation (see table). This was a decrease of 3.8 percent in quantity as compared with October 1955 imports of 74.3 million pounds. The value of the imports for November 1955, however, increased by 11.4 percent over the October 1955 value. The November 1955 imports were higher by 14.4 percent in quantity and 25.8 percent in value than in the same month a year earlier.

United States Foreign Trade in Edible Fishery Products, November 1955 with Comparisons

Item	Quantity			Value		
	Nov.		Year	Nov.		Year
	1955	1954	1954	1955	1954	1954
	(Millions of Lbs.)			(Millions of $)		
Imports:						
Fish & shellfish: fresh, frozen, & processed 1/	71.5	62.5	801.7	20.5	16.3	202.8
Exports:						
Fish & shellfish: processed 1/ only (excluding fresh and frozen)	14.3	5.8	50.8	3.3	1.4	13.2

1/ Includes pastes, sauces, clam chowder and juice, and other specialties.

Exports of processed edible fish and and shellfish (excluding fresh and frozen) in November 1955 totaled 14.3 million pounds (valued at $3.3 million)--a sharp increase of over 151 percent in quantity and 106 percent in value as compared with the October 1955 exports of 5.7 million pounds (valued at $1.6 million). November 1955 exports were higher by 146.6 percent in quantity and 135.7 percent in value than in November 1954.

* * * * *

IMPORTS OF SELECTED FISHERY PRODUCTS, JANUARY-NOVEMBER 1955: There was a large increase in United States imports of canned salmon from Japan--they totaled 2 million pounds in November and and these imports for the first 11 months of 1955 totaled 3.3 million pounds. In October 1955 almost 7.0 million pounds were received; in September, 254,000 pounds. Canned salmon imports from Canada in September-November 1955 totaled 4.6 million pounds as compared with 226,000 pounds in that period a year earlier.

Frozen tuna imports were also above those of a year ago. During the first eleven months of 1955, they totaled 137.4 million pounds, compared with 115.2 million pounds in that period for the previous year. Imports of tuna canned in brine also increased considerably over a year earlier.

A substantial increase was also reported in United States imports of shrimp which totaled 46.2 million pounds during January through November 1955. Shrimp imports during 1955 will reach a record high level.

Fish meal imports were only about two-thirds of those of a year earlier.

* * * * *

IMPORTS OF MEXICAN SHRIMP THROUGH NOGALES, ARIZ., INCREASE: In a complete reversal of recent trends, the Mexican shrimp fishery in the Gulf of Baja California has made a most surprising comeback. During the latter part of 1953 and all of the 1954/55 season this fishery appeared to be declining at an alarming rate. The extent of this decline was noted by the sharp decrease in United States imports from Mexico through Nogales, Ariz., during the 1954/55 season (through January 22), which declined to 9,660,000 pounds, or a decrease of approximately 50 percent as compared with the previous season.

Starting in October 1955 the Mexican shrimp fishery indicated a remarkable recovery, especially in the fishing areas along the east coast of the Gulf of California as far south as Mazatlan. Imports of frozen shrimp to January 22, 1956, cleared through Nogales, Ariz., were more than twice the imports for the same weeks a year earlier. At Nogales, imports of frozen shrimp from September 1, 1955, through January 22, 1956, totaled 20,439,000 pounds as compared with 8,533,400 pounds during the same period a year earlier.

Reports from importers of west coast Mexican shrimp in Los Angeles and San Diego indicated a very high rate of production in the Topolobampo Bay area. It is understood that catches in this part of the Gulf overtaxed the unloading facilities to the extent that many boats had to wait for two or three days before their shrimp could be unloaded. The size and quality of the shrimp catches has been good, with a heavy percentage of large (20 per pound heads off) white shrimp.

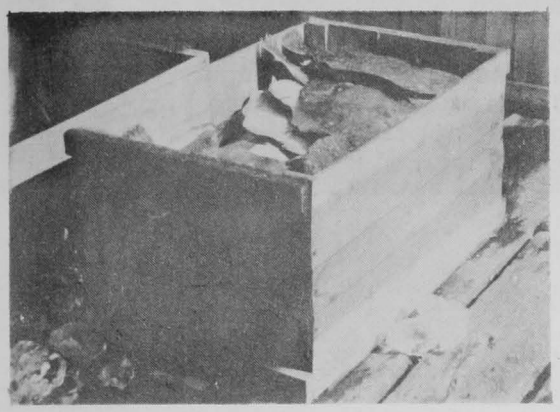
The demand, movement, and prices have been good, due in part to very light catches of shrimp in the Gulf of Mexico.

Wholesale Prices, January 1956

Following the Christmas holiday period, production by the fishing fleets, particularly on the Atlantic Coast and in the Northwest Pacific areas, was slow to pick up due primarily to cold and windy weather. The light catches were reflected in the January 1956 index (122.3 percent of the 1947-49 average) for all edible fish and shellfish (fresh, frozen, and canned) which rose 8.6 percent above that for December 1955 and was 15.7 percent higher than for January 1955.

The increase in the January 1956 index for the drawn, dressed, and whole finfish subgroup was due to price increases for all the items included in this group, with the exception of lake trout prices at Chicago which dropped slightly. Prices for fresh large drawn haddock in January were higher by 67.5 percent when compared with December 1955 and 30.7 percent higher than January 1955. Lake Superior drawn whitefish at Chicago was 30.1 percent higher than in December 1955 and

36.7 percent over January 1955. This subgroup's January 1956 index was up 22.6 percent as compared to December 1955 and 15.8 percent higher than in January 1955.



A box of fluke ready for icing and shipment at the dock of a wholesale plant in Hampton, Va.

The price increases in the fresh processed fish and shellfish subgroup amounted to 7.7 percent when compared with December 1955 and 25.8 percent as compared to January 1955. The increase from December 1955 to January 1956 was due primarily to the high ex-vessel prices for haddock at Boston and a 5-percent increase in the index for fresh headless shrimp at New York. January 1956 prices for both fresh small skin-on haddock and fresh headless shrimp were up 41-42 percent and for fresh shucked oysters 10 percent higher, as compared with January 1955.

The price index for the processed frozen fish and shellfish subgroup changed only slightly (up 2.4 percent) when compared with December 1955. The change between January 1955 and January 1956 was much

Table 1 - Wholesale Average Prices and Indexes for Edible Fish and Shellfish, January 1956 With Comparisons

Group, Subgroup, and Item Specification	Point of Pricing	Unit	Avg. Prices1/ ($)		Indexes (1947-49=100)			
			Jan. 1956	Dec. 1955	Jan. 1956	Dec. 1955	Nov. 1955	Jan. 1955
ALL FISH & SHELLFISH (Fresh, Frozen, & Canned)					122.3	112.6	112.0	105.7
Fresh & Frozen Fishery Products:					136.5	2/121.1	118.5	111.6
Drawn, Dressed, or Whole Finfish:					143.5	117.0	119.3	123.9
Haddock, lge., offshore, drawn, fresh	Boston	lb.	.21	.12	208.2	124.3	125.7	159.3
Halibut, West., 20/80 lbs., drsd., fresh or froz.	New York	lb.	.29	.28	89.2	85.1	84.6	85.6
Salmon, king, lge. & med., drsd., fresh or froz.	New York	lb.	.60	.59	135.4	133.1	133.7	125.6
Whitefish, L. Superior, drawn, fresh	Chicago	lb.	.69	.53	171.0	131.4	185.9	125.2
Whitefish, L. Erie pound or gill net, rnd., fresh	New York	lb.	.70	.68	141.5	136.5	171.9	143.5
Lake trout, domestic, No. 1, drawn, fresh	Chicago	lb.	.64	.65	131.1	132.2	132.2	103.5
Yellow pike, L. Michigan & Huron, rnd., fresh	New York	lb.	.50	2/.44	117.3	102.0	102.0	117.3
Processed, Fresh (Fish & Shellfish):					133.7	124.1	117.1	106.3
Fillets, haddock, sml., skins on, 20-lb. tins	Boston	lb.	.64	.39	217.7	132.7	122.5	153.1
Shrimp, lge. (26-30 count), headless, fresh	New York	lb.	.75	.72	118.5	113.4	100.5	83.8
Oysters, shucked, standards	Norfolk	gal.	5.50	5.50	136.1	136.1	136.1	123.7
Processed, Frozen (Fish & Shellfish):					117.6	2/114.3	109.7	89.2
Fillets: Flounder (yellowtail), skinless, 1-lb. pkg.	Boston	lb.	.40	.40	104.7	104.7	104.7	98.2
Haddock, sml., skins on, 1-lb. pkg.	Boston	lb.	.30	.29	92.6	91.0	89.5	90.2
Ocean perch, skins on, 1-lb. pkg.	Boston	lb.	.29	.28	114.8	112.8	108.8	111.8
Shrimp, lge. (26-30 count), 5-lb. pkg.	Chicago	lb.	.79	.76	121.1	116.5	110.0	72.5
Canned Fishery Products:					102.2	100.5	102.6	97.2
Salmon, pink, No.1 tall (16 oz.), 48 can/cs.	Seattle	case	21.70	21.70	120.0	114.8	114.8	104.4
Tuna, lt. meat, chunk, No. 1/2 tuna (6-1/2 oz.), 48 cans/ cs.	Los Angeles	case	11.80	11.80	85.1	85.1	90.8	93.0
Sardines, Calif., tom. pack, No. 1 oval (15 oz.), 48 cans/cs.	Los Angeles	case	7.00	7.00	81.7	81.7	86.1	85.2
Sardines, Maine, keyless oil, No. 1/4 drawn (3-1/4 oz.), 100 cans/cs.	New York	case	8.45	8.70	89.9	92.6	87.3	71.3

1/Represent average prices for one day (Monday or Tuesday) during the week in which the 15th of the month occurs. These prices are published as indicators of movement and not necessarily absolute level. Daily Market News Service "Fishery Products Reports" should be referred to for actual prices.
2/ Revised.

sharper due mainly to an increase of 67 percent in frozen shrimp prices from 1955 to 1956.

Price changes for the canned fishery products subgroup were only slight between December 1955 and January 1956, but the increase from January 1955 to January 1956 was close to 5 percent. Prices in January 1956 for canned tuna were down 9.2 percent and canned California sardines 4.1 percent as compared with January 1955, but both canned Maine sardines and canned salmon were up 15.0 percent and 26.1 percent, respectively.

STORAGE LIFE OF PRECOOKED FROZEN FOODS

"What is the storage life of precooked fishery products?" is a question often asked since precooked fish sticks, pies, and dinners have become so popular. The Quartermaster Food and Container Institute for the Armed Forces, Chicago, Ill., has just published a book entitled Precooked Frozen Foods. This book contains numerous papers which were given by leading authorities in the frozen food field at a symposium held recently by the Quartermaster.

One of these papers, "Keeping Quality During Storage of Precooked Frozen Foods," gives an insight into this question. The summary of the paper states:

"Many factors influence the storage life of precooked frozen foods. These include the quality of the initial product, preparation, seasoning ingredients, cooking, packaging, period of storage, and constancy of the storage temperature.

"The storage life of most precooked foods is much shorter than that of the same foods frozen uncooked. This is due largely to the gradual loss of the freshly-cooked aroma and flavor of most seasoned products, during freezing storage, which can be only partially restored by reheating. Other losses in quality are due to changes in seasoning ingredients and rancidity of fats.

"Some precooked foods may be satisfactorily held frozen for more than a year; some of these are stewed and sweetened fruits, fruit cakes, cookies and low-fat and lightly-seasoned beef, or chicken stew. Others, including meats, fish, poultry, and meat-and-vegetables combinations cooked with moist heat and covered with gravy, liquor, or sauce, as well as most cakes and pies, may be held for 6 to 9 months. Most fully-cooked vegetables, fried chicken or fish, barbecued chicken or pork, or doughnuts and other bakery products cooked in deep fat, and leftovers are stable for only a few weeks in freezing storage."