The fishery industry and associated enterprises have cooperated with the Fish and Wildlife Service in conducting sanitary surveys of certain fishing centers of the Chesapeake Bay. As a result, it has been possible to improve the sanitation in a number of fishery establishments as well as in the communities generally. By removing garbage and refuse dumps, installing modern plumbing, and cleaning the fishery plants, it has been possible to install a consciousness of cleanliness in the plant operators which will be reflected in the production of better quality fish and shellfish.

The use of DDT for the control of flies and other insect pests in fishery establishments has been investigated in cooperation with the Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture. The first large scale application of DDT for civilian use was made at Crisfield, Maryland, during the first week of September. A reduction of 95 to 99 percent was made in the fly population in the fishery plants and this reduction has been maintained to the present.

The effect of DDT on the blue crab was also studied. In concentrations of the insecticide which greatly exceed those which usually obtain from airplane applications, the crab is rendered inactive but quickly revives if placed in fresh sea water. Even after an exposure to DDT for one hour in the inactive state, the crabs revived and showed no evidence of toxic effects.

A new, rapid method for the detection of coliform bacteria was worked out in cooperation with the University of Maryland and the Crisfield Seafoods Laboratory. The test depends upon the use of Duponol to restrict the growth of bacteria other than the coliforms and the ability of these bacteria to reduce nitrates rapidly. A preliminary report will appear in an early issue of the Journal of Bacteriology and the method of applying the test to seafoods will be published soon.

A graduate student, working at the College Park Laboratory, is studying the possibility of finding a better index to fecal pollution than the coliform bacteria. At present, the possibility of using the enterococci looks very favorable. These organisms have been found in all waters studied thus far which are known to be polluted. In waters surrounding a source of pollution, the enterococci out-number the coliform bacteria, while deep waters far from sources of contamination rarely, if ever, contain enterococci while they may contain coliform bacteria. The enterococci are resistant to high concentrations of salt, to wide variations in temperature and to antibiotic and other chemical substances. These properties indicate that this group of organisms may prove to be a superior index of pollution.

FISH PRODUCTION AT NEW BEDFORD

By William F. Royce*

The New England fishing industry, which produces the principal United States supply of fresh and frozen fillets and steaks, attained a record fish production in 1941. It was drastically reduced in 1942 and 1943 by the transfer of vessels to the armed forces. The construction of new vessels and the return of many others which had been in the armed forces, increased production slightly in 1944 and markedly in 1945. The production for the three principal ports of New England is shown in Table 1. It is to be noted that 1945 landings in these three ports were larger than the previous all-time peak year of 1941. This upward trend is expected to continue in 1946 if the abundance of the fish is maintained, since the producing capacity of the fleet has steadily increased during 1945.

New Bedford's contribution to this production picture has been a steadily increasing expansion from landings of 22 million pounds in 1938 to 101 million pounds in 1945. Several important changes in the industry have occurred to bring this about. New Bedford was primarily a landing and outfitting port for the boats and a shipping point for fish destined mostly for New York and Boston until 1939, when the first fillet plants started operation.

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Since then, the fillet industry has steadily expanded until 1945 when 18 plants were operating. Now, about one-half of the landings are processed in the port and the packaged products shipped to much more extensive markets.

Table 1 - Landings at Principal New England Ports
(Expressed in Thousands of Pounds)

Year	Boston	Gloucester	New Bedford	Total	Year	Boston	Gloucester	New Bedford	Total
1938	318,731	60,698	1/ 21,571	401,000	1942	194,652	157,741	57,883	410,276
1939	295,346	75,661	1/ 27,213	398,220	1943	142,968	170,099	62,164	375,231
1940	252,770	96,161	1/ 37,401	386,332	1944	151,762	188,661	74,936	415,359
1941	299,332	148,445	1/ 46,063	493,840	1945	2/188,000	2/212,000	2/101,000	2/501,000

1/ Compiled from preliminary tabulations. 2/ Include preliminary totals for December.

The trend in New Bedford fish production is indicated by the number and size of vessels which are being constructed. Prior to the war, the fleet consisted almost entirely of small otter trawlers, which could safely fish only the flounder grounds within 90 miles of port. Nearly all the vessels which have been built during the wartime period, have been of the larger sizes which can regularly fish the haddock and cod grounds on Georges Bank and beyond. During 1944, 26 additional vessels (including new ones and those returned by the Government) started fishing out of New Bedford. In 1945, about 22 more vessels began fishing before November 30. These larger vessels have started to fish the even more distant Nova Scotian banks (200 - 500 miles from port) and several vessels have made regular trips to these banks since June 1945.

New Bedford landings (Figure 1 and Table 2) were comprised principally of flounders until 1943, when a scarcity of these species forced the fleet to turn to other kinds of fish. Since then, the catch of haddock and cod has greatly increased as well as the landings of several miscellaneous species such as lemon sole, red hake, mackerel, scup, ocean pout, and fluke. The landings of sea scallops, although of relatively small volume, are of high value. New Bedford has long been the principal sea scallop port in the United States and is retaining this leadership with fairly uniform landings of about 4 to 5 million pounds per year.

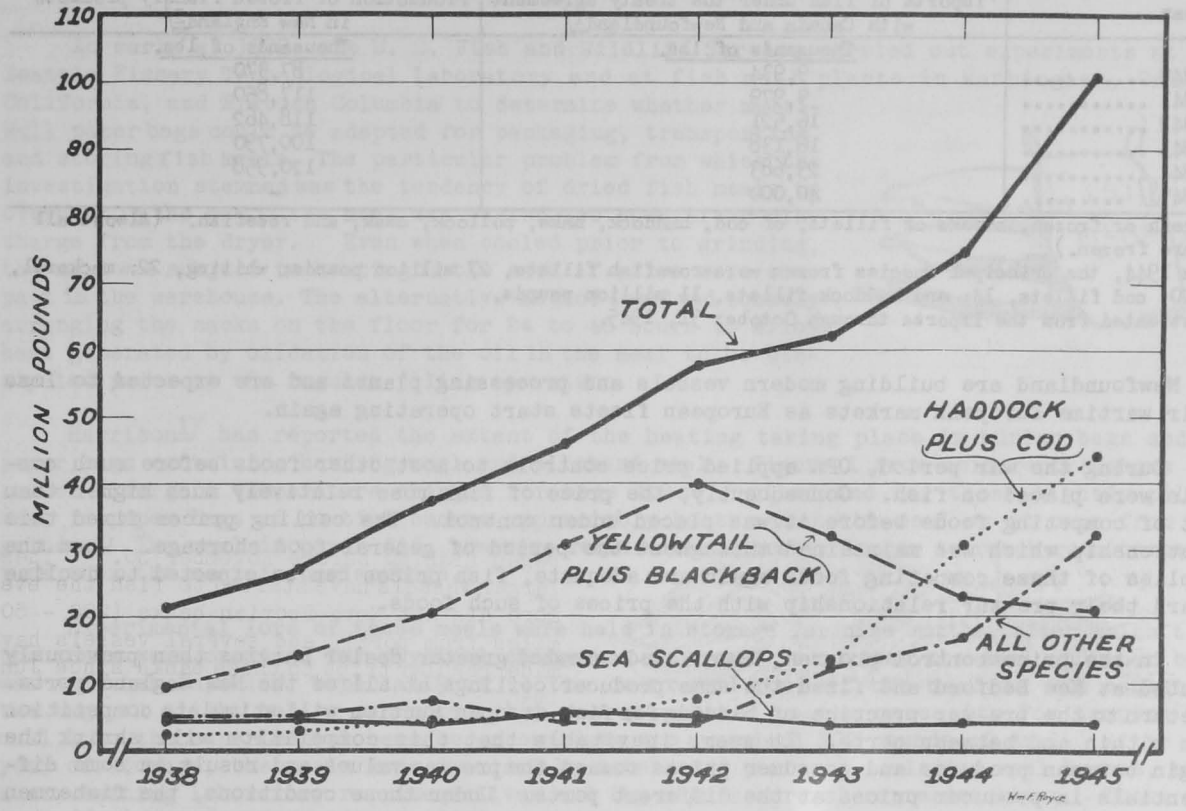
Table 2 - New Bedford Landings
(Expressed in Thousands of Lbs.)

Year	Haddock and Cod	Yellowtail and Blackbacks	Scallops	All Others	Total
1938	2,597	9,585	4,255	5,134	21,571
1939	3,063	14,442	4,733	4,975	27,213
1940	4,591	20,878	4,414	7,518	37,401
1941	5,045	30,957	5,579	4,482	46,063
1942	7,744	40,218	5,446	4,475	57,883
1943	13,742	32,185	3,832	12,405	62,164
1944	30,677	23,208	4,009	17,042	74,936
1945 1/	44,100	21,100	4,000	32,100	101,300

1/ Estimated from landings in first 11 months.

During the late 1930's, fish dealers in New Bedford had a ready market for their fresh product in coastal cities of the northeastern United States. With the increase in landings and the development of the fillet industry, an increased demand for freezing facilities arose, but New Bedford has lagged far behind other major New England ports in construction of such freezing facilities (Table 3). Construction now already started or contracted for will bring these facilities up to a relationship to production similar to that existing in other major New England ports.

— FIGURE 1 —
LANDINGS AT NEW BEDFORD
1938-1945



Fish-producing facilities are at an all-time peak, but the amount of fish that will be taken by the greatly increased fleet will depend also on the stocks of fish available to

Table 3 - Comparison of Fish Production and of Fish Freezing and Storage Facilities for Major New England Ports

Locality	1944 Landings	Estimated fish storage capacity	Estimated fish freezing capacity, per 24 hours
	Millions of lbs.	Thousands of lbs.	Thousands of lbs.
Gloucester[1]	189	10,250	280
Boston	152	21,950	530
New Bedford[2]	75	3,000	110
Cape Cod	40	11,600	230
Portland	17	4,000	120

1/ Projects now under construction will increase storage capacity to about 12,750,000 pounds and freezing capacity to about 380,000 pounds.

2/ Projects now under construction or for which contracts have been let will increase storage capacity to about 7,400,000 pounds and freezing capacity to about 207,000 pounds.

the fisherman. Yellowtail flounder production has drastically declined since 1942 because of a decrease in abundance of the fish. There seems little likelihood of a return of this species to its former productivity. Haddock[1] abundance on Georges Bank has risen slightly during the war because of the reduced fishing fleet. Further increase in the stock is not expected because very few haddock were produced from spawning in 1941 and 1942. This lack of survival of the young is now reflected in a scarcity of scrod haddock which will be followed by a decline in the catches of large haddock in 1946 to 1948. Thus, the nearby stocks of haddock and yellowtail flounder, the principal species of the New Bedford fishery, have a somewhat uncertain future.

Imports of foreign fish will furnish increasing competition in the markets for frozen fish. Table 4 indicates the steady increase of North Atlantic species being imported from

1/ Based on data collected by the Service's North Atlantic Fisheries Investigations.

Canada and Newfoundland, while during this same period, New England production of comparable products exhibits no such trend. The increase in imports will probably continue. Canada

Table 4 - Comparison of Frozen Fish Production in New England and Imports from Canada and Newfoundland

Year	Imports of fish under the treaty agreement with Canada and Newfoundland[1]	Production of frozen fishery products in New England[2]
	Thousands of lbs.	Thousands of lbs.
1940	9,934	87,370
1941	9,979	117,850
1942	16,521	118,462
1943	16,138	100,790
1944	23,683	120,958
1945[3]	40,000	-

1/Fresh or frozen, steaks or fillets, of cod, haddock, hake, pollock, cusk, and rosefish. (Almost all are frozen.)

2/In 1944, the principal species frozen were rosefish fillets, 27 million pounds; whiting, 22; mackerel, 20; cod fillets, 14; and haddock fillets, 11 million pounds.

3/Estimated from the imports through October 31, 1945.

and Newfoundland are building modern vessels and processing plants and are expected to lose their wartime European markets as European fleets start operating again.

During the war period, OPA applied price controls to most other foods before such controls were placed on fish. Consequently, the price of fish rose relatively much higher than that of competing foods before it was placed under control. The ceiling prices fixed this relationship which was maintained throughout the period of general food shortage. When the supplies of these competing foods again are adequate, fish prices can be expected to decline toward their pre-war relationship with the prices of such foods.

In the price control program, OPA allowed somewhat greater dealer margins than previously existed at New Bedford and fixed the same producer ceilings at all of the New England ports. A return to the pre-war practice of bidding for fish at open auction will stimulate competition both within and between ports. It seems inevitable that this competition will shrink the margin between producer and consumer prices toward the pre-war values and result in some differentials in producer prices at the different ports. Under these conditions, the fishermen will be encouraged to return to the pre-war practice of selling at the port currently offering the best prices.

The New Bedford fishery should look forward to the following post-war conditions:

1. Relatively less fish freezing and storage facilities than exist in other major New England ports until the contemplated facilities are constructed.

2. An increase in fish producing facilities (boats) which will be at least partially balanced by a decline in fish stocks.

3. Vigorous competition for markets with other New England fishing ports, with competing protein foods, and with imported fish products.