

The advent of factory ships that sail to distant fishing grounds has made it possible to preserve the processed fish by freezing them almost immediately after catching. These ships, equipped with by-product plants for edible meal and oil, are capable of storing large quantities of the finished product. They may spend as long as six months on a single trip and make unnecessary the frequent and long trips of trawlers or other primary implements of production, to and from the manufacturing plants on the shore. However, the initial and operating costs and the difficulties of securing adequate personnel are limiting factors. Fortunately, Canada, being situated in close proximity to rich fishing grounds, has not found it necessary to use them.

Speed of handling is all-essential because fish deteriorates so rapidly. The rapid handling of large catches has been brought to its zenith in the larger fish canneries. From automatic loading devices and deviscerating, trimming and cutting machines, the fish is passed through a filling machine where cans are filled at the rate of one hundred and twenty-five per minute. Each can is automatically weighed before it is finally closed in vacuum sealing machines and passed on for steam processing. In this way the salmon canneries of the Pacific Coast are able to pack over one and one-half million cases of forty-eight pounds each in a short season of three months. In this operation a high degree of uniformity and quality is maintained, an achievement which has in no slight degree been assisted by government inspection of the product.

In the fresh and frozen branch of the industry there is also a movement towards the more rapid handling of the product. It is claimed that a filleting machine of recent design can handle cod or haddock weighing from 1.5 to 10 pounds per fish at a speed of fifty per minute, as well as producing more fillets per pound of fish than is possible by hand-cutting. Production by hand yields one hundred pounds of fillet from two hundred and seventy pounds of uncut fish, whereas the machine produces one hundred pounds from two hundred and eight pounds. This method provides speed, uniformity of product and a saving of raw material. In addition to this cutting machine, fish-handling plants are rapidly availing themselves of belt conveyors, automatic washing machines, wrapping machines and other devices that tend to make possible the rapid handling by mechanization of large quantities of raw material.

It is common knowledge that the consumers preference has veered towards the individual branded package for most food products. The fishing industry is doing more and more towards satisfying this preference. This is more possible with the frozen than with the unfrozen fillet, and the frozen article wrapped in cellophane is now common. Since the freshness of the product is fixed at the time of freezing, and since it is now possible to prevent significant deterioration during storage, the manufacturer can stand behind the quality of his product by placing his brand upon it—something that he could not do with unfrozen fish, since the state of freshness is quite beyond his control once it leaves his hands.

Thus, recent developments in the technology of processing are making for better preservation, speed of handling and the satisfaction of consumer preference.

Establishments, Capital, Employees, Materials Used and Products.—Among the fish-canning and -curing establishments in operation in Canada in 1939, the salmon canneries comprise the principal group with an investment valued at \$11,566,687, or 54 p.c. of the total for all establishments. About 72 p.c. of the value of production of the establishments is credited to fish canned, cured, or otherwise prepared, and 28 p.c. to fish marketed for consumption in a fresh state.