THE oldest industry in Nova Scotia is that of fishing. European vessels fished in Canadian waters before Nova Scotia had any permanent white settlements, and production has been carried on continuously since settlement of our coastal areas began.

Until thirty years ago, the industry was carried on as a cured product. Cod, haddock, hake and pollock were split, salted and dried and exported to foreign markets in Europe, South and Central America, the United States, Cuba and other islands in the Caribbean Sea including the British West Indies. Mackerel, herring and alewives were cured in brine and packed in barrels for the domestic and export trade.

While accurate figures of the early trade are lacking, it is known that in the latter half of the last century, the Nova Scotian catch fluctuated between 400,000 and 700,000 quintals per annum and the total Canadian production must have attained close to 900,000 quintals, thus putting Canada in second place only to Newfoundland as a world producer.

With the inception of development of the fresh fish industry in Canada in the first decade of this century some localities began transferring their activities from dried to fresh fish. The Canso district was in the vanguard of this movement, followed by Lockeport, Yarmouth and Digby. It was not until very recent years that Lunenburg producers began marketing their fish in a fresh state on the domestic market, subsequent to the loss of foreign markets for dried fish. While the above changes naturally resulted in some curtailment of production in dried fish, the industry continued to be fairly prosperous until ten years ago. The period of greatest prosperity was from 1913 to 1922 due partly to wartime high prices but chiefly to the effects of the Underwood tariff in the United States. Under this tariff, fish of Canadian origin were admitted free into the United States and Porto Rico, while imports from other countries such as Newfoundland were subject to high tariffs. This period was one of real boom conditions in our salt fish trade, both dried and pickled. The shore fishermen and boats employed, increased greatly in numbers and the Lunenburg banking fleet was also increased.

Following the war, Norway began the payment of bonuses on exports to Havana, Cuba, in order to displace Canadian fish which for some years had enjoyed a monopoly of that market. Over a period of several years this policy was completely successful and during the past ten years there has never been an occasion when a Canadian exporter could have sold his fish in Havana and recovered initial cost without any provision for overhead. This policy of subsidies by Norway was later extended into a general plan of export subsidies and minimum prices. As a result, Norwegian production has been kept at an artificially high level.

In the post-war years, the French Government inaugurated a bonus of forty francs per quintal which very quickly stimulated France's production to the point where a figure had to be set for maximum production on which subsidies would be paid. It should be stated that the French authorities regard the crews of their fishing fleets as a nucleus for naval forces, and this is the primary reason for Government assistance. Time served in the fishing fleets, is in part counted as time served with the colors under the military and naval service requirements of the Republic.

Perhaps the most disturbing development in the dried fish trade during the

1. A quintal is 112 lbs.

EDITOR'S NOTE: O. F. MacKenzie is President of the Halifax Fisheries Limited in Halifax. He has for many years given special attention to the problems treated in the article. In 1937 he was a member of a Commission sent by the Dominion Government to the West Indies and South America to study markets for Canadian dried fish.
20's was the appearance of Iceland as a major producer. This country had for years been producing about 250,000 quintals of dried fish per annum. Following the war, backed by a group of London banks, a large number of trawlers that had been used by the admiralty as mine sweepers, were acquired and placed in the Iceland fishery. Production zoomed up spectacularly from 250,000 quintals to a maximum of 1,500,000 quintals reached about five or six years ago. While this production did not receive Government export subsidies, it was nevertheless just as uneconomic, as the companies continued to lose money and were re-organized several times. The operating crews received a living little if any above the subsistence level and the capital investment was lost. Finally in 1935 production fell to 1,000,000 quintals and in 1936 to 500,000 quintals. The disturbing effect of this sudden increase in supplies from Iceland on the import markets can be easily realized.

Newfoundland was particularly hard hit by this increase in Iceland's production. Newfoundland had for years been exporting her so-called “Labrador Slop” codfish to Greece, Genoa and to various markets in Spain, such as Barcelona. Iceland began imitating this cure and selling as "Labrador" style at a price usually several shillings below the price on genuine Labrador quoted by Newfoundland exporters. This in turn caused Newfoundland exporters to turn their attention increasingly to markets in the Caribbean Sea, supplied by Canadian exporters. In 1922 the Fordney-MacCumber tariff in the United States wiped out the preference on fish enjoyed by Canada, and in 1930 the Hawley-Smoot tariff reduced the duty on fish of high moisture content such as "Labrador Slop" from $1.25 to 75c. per 100 lbs. With this setting, the way was paved on the advent of the depression for ousting Canadian fish from the dominant position enjoyed for so many years on the Porto Rico market.

After indirect assistance for several years, in 1938 the Newfoundland Commis-
Another feature of this trade agreement was that by large preferences on raw sugar fixed at $20.00 per ton Canada's substantial purchases of sugar in Cuba and the Dominican Republic were all transferred to Empire countries and led to retaliations on the part of both these Republics in the form of prohibitive duties. Not only did we fail to maintain our position in British West India markets but we lost other valuable markets as a result of the trade agreement.

Canadian markets for dried fish have always been chiefly in foreign countries. For example, in 1927 exports were 727,000 cwts. Of this quantity Empire countries took only 139,000 cwts. while countries outside the Empire took 588,000 cwts. Another unfortunate aspect of this trade was that foreign markets took our best qualities and paid a handsome premium over the prices received in Empire countries. In view of this situation, it was inevitable that with the development of Empire preferences, the fishing industry of the Atlantic Coast would be the chief sufferer.

Another factor contributing to the decline of Canadian production has been transportation rates. Freight rates on fish from Canada to markets are higher than those from other producing countries in relation to distance carried. The routes to the Caribbean Sea are served by such an excess of tonnage over the prices received in Empire countries. In view of this situation, it was inevitable that with the development of Empire preferences, the fishing industry of the Atlantic Coast would be the chief sufferer.

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industry. There is a constant transfer of activities to more profitable branches of the industry, thus bringing all branches to the saturation point. This is a situation foreseen by leaders in the industry. As this condition becomes more generally recognized, it is a reasonable assumption that those charged with the responsibility of administering the fishery resources of Canada, will take the necessary steps to recapture the former trade in dried fish and thus pave the way for profitable operations throughout the entire industry.

No attempt has been made here to deal with the social or human aspects of this problem which so gravely affects the livelihood and welfare of many thousands of our inshore fishermen who have no other means of employment.

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**Recent Developments in Processing Fish**

*By D. B. Finn*

"And they went down to the sea to fish".

**From** time immemorial men have gone down to the sea to fish with simple gear and simple methods. The years have not brought a great deal of change. Increased effectiveness or radical improvement in catching has been discouraged rather than encouraged because fishermen did not wish to see their gear outmoded and because of legislative restriction in the interests of conservation. Thus, all our more important fisheries depend upon one or other of the methods of spearing, harpooning, single-hooked lining, multi-hooked long lining, gill netting, seining, trapping or trawling, these latter two often being restricted by government regulation.

It is in handling the fish after they come from the water that improvement can most readily be noticed. Naturally the foremost effort is that of preventing deterioration in this product which spoils so rapidly. Various ways are chosen but nearly all of them depend upon keeping the fish cool by placing them as soon as possible in crushed ice. Sometimes the fish is cleaned before stowing, as with cod and haddock and sometimes, where the time between catching and landing at the wharf is short as with the Atlantic inshore vessels or with the Pacific salmon boats, they are not cleaned until they are in the fish processing plant where the operation is often done at unbelievable speed by machinery. Here we must digress for a moment from the sequence of description in order to say something about the factory ship because it is in this rather complex implement that efforts to stabilize quality reaches its zenith. A factory ship is one which not only catches the fish but processes it on board immediately after catching. Several such vessels are operated from European ports. Some countries send them to the Grand Banks for cod and haddock, others to Greenland for halibut and recently the Japanese have sent floating canneries to the Canadian Pacific and Alaskan coasts. These vessels, which are almost the size of a large liner, are equipped with a number of smaller boats which do the actual fishing. The Mother ship is equipped with up-to-date freezing apparatus and well constructed cold stores. All the waste from the processes is gathered and turned into fish meal and oil. Perhaps some of the cargo is salted to be manufactured when the vessel once again reaches port, the period of which is sometimes six months from the beginning of the venture. It may be only a matter of time before this method of handling

**EDITOR'S NOTE:** D. B. Finn, M.Sc., Ph.D., F.C.I.C., is Director of the Fisheries Experimental Station at Halifax and Associate Professor of Biochemistry at Dalhousie University. Last year he contributed another article to this journal "The Fisheries and Science": *Public Affairs* 1, p. 51.