

ANNUAL MEETING - JUNE 1959Size and Age Composition of Cod from the Fishery on the Southwest Coast of Newfoundland during 1957By A. M. Fleming and S. J. Olsen

On the western part of the south coast of Newfoundland there is a winter fishery for cod which extends from January to April each year. Tagging experiments conducted by the Fisheries Research Board of Canada, Biological Station, St. John's, have shown that this fishery is mainly for cod which have migrated from the Gulf of St. Lawrence in late autumn. In May, when the cod are moving back into the Gulf after having spent the winter on grounds near the southwest coast of Newfoundland, the fishery declines to a very low level.

Observations of the fishery were conducted at Isle aux Morts on the southwest coast of Newfoundland during 1957. The fishery is a linetrawl fishery with several types of boats, including small motor dories and motor boats, larger longliners with mechanical haulers, and a few "jack boats" carrying 2 or 3 dories from which the lines are pulled by hand.

Fishing is carried out 3 to 5 nautical miles from shore along a narrow strip of ground in depths from about 60 to 80 fathoms (110 to 146 m.) generally. At greater depths the bottom is muddy and cod are generally scarce.

In the 1957 fishery sizes of fish caught ranged from just over 30 cm. to about 130 cm. However, few fish smaller than 40 cm. or larger than 90 cm. were taken. Fig. 1 shows the percentage length distribution of the samples, and Fig. 2 the calculated length distribution of the landed catches.

In March the length distribution had a primary mode at 60-61 cm. and a secondary mode at 44-48 cm. This was during the period of highest landings, with an estimated 725,000 fish weighing 3,042,900 lb. (1,380 metric tons) being landed during the month.

By April a change had occurred in the length distribution with a large decrease in numbers of fish smaller than 72-73 cm. but with little change in the numbers at the larger sizes. A primary mode at 62-63 cm. and a secondary mode at 44-45 cm. are obvious in this distribution. Landings during April had decreased, with an estimated 497,300 fish weighing 2,615,400 lb. (1,186 metric tons) landed.

By early July, the relative decrease in the numbers of cod of the smaller sizes was even more pronounced, and the length distribution was marked by a modal group at 76-77 cm. By July, the landings had reached a very low level, with only about 28,700 fish weighing 216,000 lb. (98 metric tons) being landed in the month.

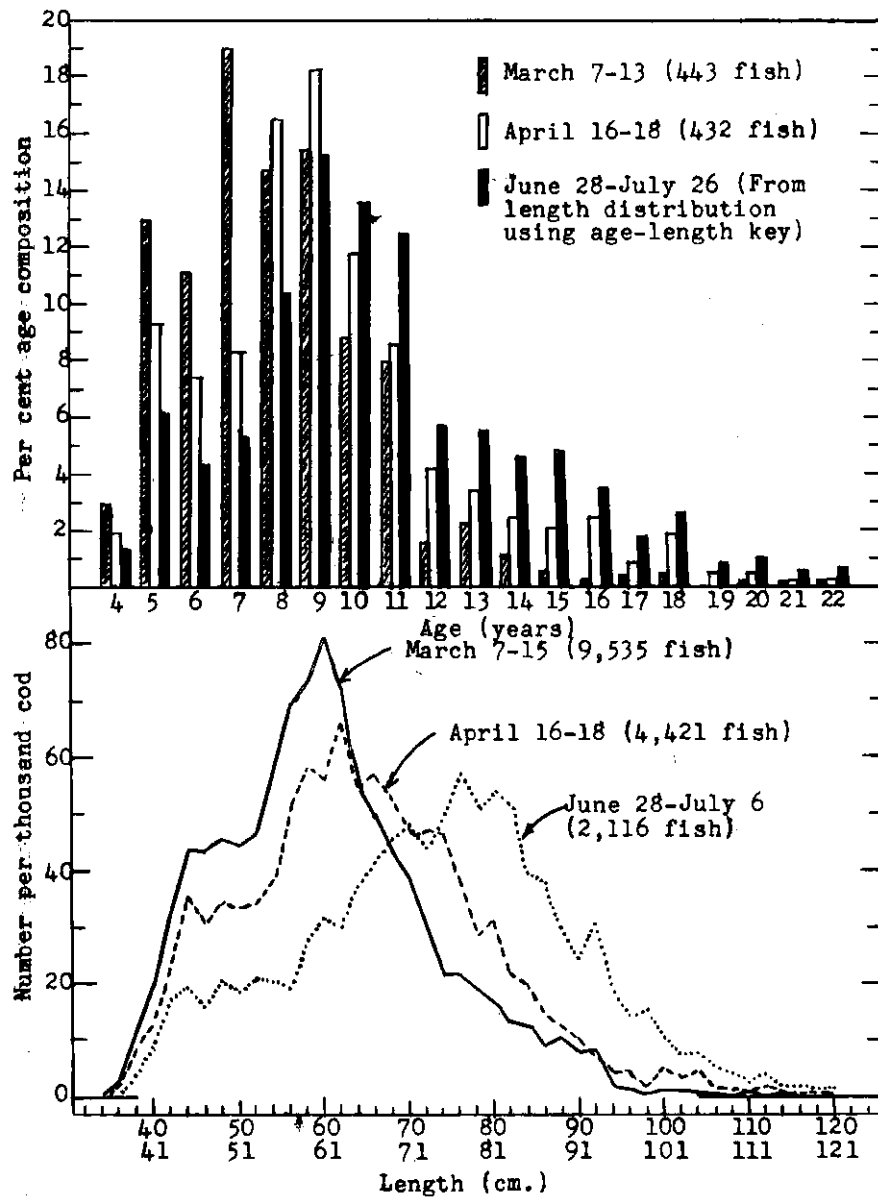


Fig. 1. The percentage age and length distribution of samples from the landed catches of cod in March, April and July from the fishery on the southwest coast of Newfoundland, 1957.

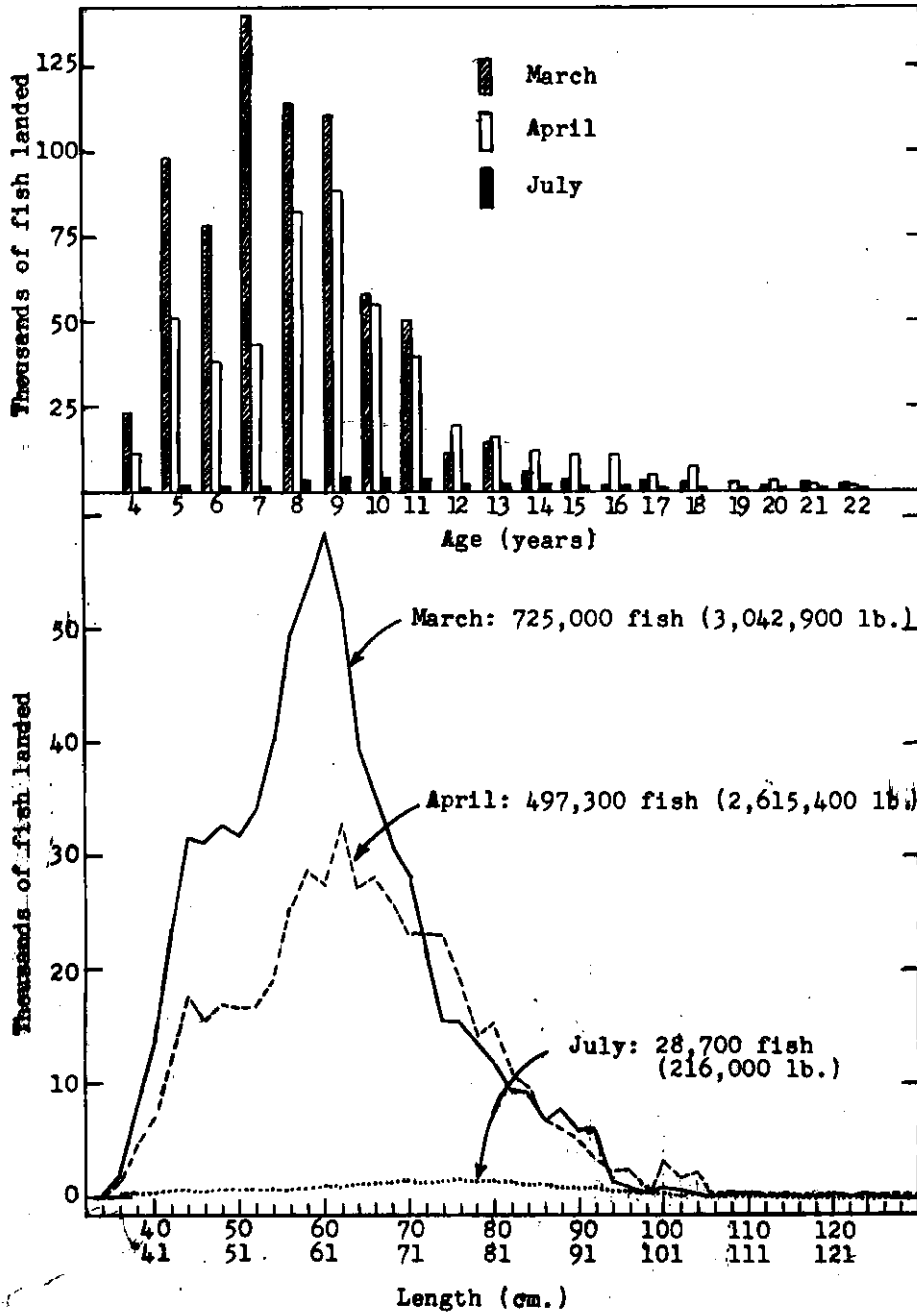


Fig. 2. The calculated age and length distribution of the landed catches of cod in March, April and July from the fishery on the southwest coast of Newfoundland, 1957.

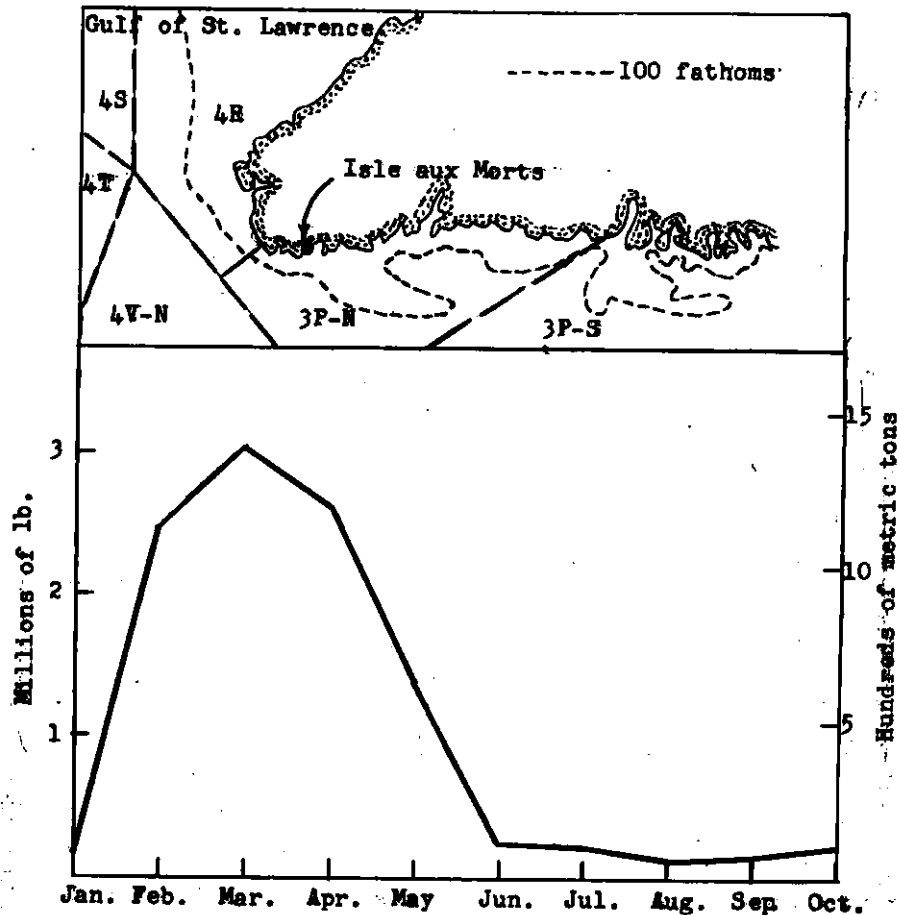


Fig. 3. Landed catches of cod, southwest coast of Newfoundland, January to October, 1957.

An examination of the length distributions of samples from the different types of fishing boats operating out of Isle aux Morts revealed no great differences between them.

The age composition of samples of the catches indicates a large range of ages being caught from 4 to over 20 years of age. Fig. 1 shows the percentage age composition of the samples, while Fig. 2 shows the calculated age composition of the landed catch during the months of sampling. In March, fish from 5 to 9 years of age were the most numerous. By April, however, all the age-groups up to 9 had been considerably reduced in numbers, and all age-groups above 11, though relatively poorly represented in comparison with the younger groups, were more abundant than was evident in March (Fig. 2). In July, when landings were at a low level, the younger age-groups were even less abundant relative to the older groups than in April (Fig. 1).

The March and April samples are largely made up of fish that belong to the migratory stock. This stock, after wintering in the southwest coast area, moves back into the Gulf in April and May. On the other hand, the July sample would be composed of fish considered to be of the much less numerous "resident" stock.

The catch in the southwest coast fishery gives some idea of the relative abundance of cod in the area throughout the season (Fig. 3). In 1957 landings were low at the beginning in January when the fishery depended upon the relatively small numbers of cod of the "resident" stock. Through February, March and April landings were relatively high while the fish of the migratory stock were wintering in the area. A decrease in abundance of fish in May was indicated by diminishing success in the fishery. By June the catch dropped to a low level and remained there throughout the summer. The decreased summer fishery was for fish of the "resident" stock which are apparently far less abundant than fish of the migratory stock which mixed with them and on which the success of the winter fishery depended. The migratory stock apparently consists largely of fish up to 10 years of age whereas the "resident" stock contains older fish in greater abundance.

