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PRELIMINARY ESTIMATION OF YOUNG COD, HADDOCK
AND BASS FOUND IN THE NORTH-WEST AREAS OF
THE ATLANTIC OCEAN

by Nevinsky M.M.

In the period of December, 1961 - March, 1962, the Polar Institute (PINRO) carried out its first estimation of young cod, haddock and bass found in the areas of Labrador, Newfoundland, and New Scotland (the ICNAF Zone). The investigation was aimed at a long-term forecasting of fish stock and sources with a view to organize trawling fishery in the above areas. The estimation of young fish was made on board the vessel POBYEDA in accordance with the technique suggested by the PINRO for the Barents sea.

To catch fish, the use was made of a trade bottom trawl whose 12-metre long net was of a fine-cell (8 mm) cotton cloth. The estimation was based on all the cods and haddocks up to 36 cm long and basses up to 12 cm long taken by a trawl. The fish landed during one-hour trawling were considered to be an index of a relative number of young fish of various ages.

As many as 204 trawlings were made during the voyage. The data obtained give an idea of a relative number of young cod, haddock, and bass and can serve as a basis to describe the yield of of broods after the age has been studied.

Figs 1-5 and Table 1 show the results of a young fish estimation.

Description of Young Cod

(Fig. 1)

In the areas investigated during the given period, the following basic concentrations of young cod have been located: the South Labrador region (2 I) - to the North and South of the Hamilton Bank; in the shallow waters of the Hamilton Bank; the region of the North Newfoundland Bank (3K) near the island

of Bell-Ail, at the North-East slope BHE (3L), and the southern section of the shallow waters at the Flemish Cape Bank (3M).

The bulk of young cod have been found in the areas of South Labrador, North Newfoundland Bank and North-East slope BHE (Table 1). A pronounced drop in the yield of young cod was observed when going southward, in the regions of the Flemish Cape Bank, St. Pier (3P), and at the southern slopes of BHE (regions 3O and 3N).

In the areas of New Scotland (4V and 4W) the yields of young cod are also rather poor. There are almost no young fish in the region of the George Bank.

Young cods in the above areas mainly concentrate in the depth range of from 50 to 350 m, deeper than 400 m but occasional specimens have been revealed.

Sizes of Young Cod (Fig.2)

Since no assessments of young fish age have been made yet, their sizes are taken as a guide as to the brood of fish predominant in this or that region.

The sizes of young fish in the regions investigated allow us to think that cod specimens up to 36 cm long pertain to three-year-old fish and younger, i.e., to the broods of 1961 (0+), 1960 (1+), and 1959 (2+). Fig. 2 testifies to the fact that the sizes of young cod in various regions differ.

To cite an example, in the region 2 I, in 1962 the bulk of caught young cod was of 20-35 cm size. Bearing in mind that young fish of that size are 2 to 3 years old we can arrive at a conclusion that the region is characterized in the main of 1960 and 1959 broods. The size curve in the chart drawn for the Newfoundland Bank (3K) shows that the larger part of specimens there is of the 1960 brood, the peak being 24 cm.

The North-East slope of BHE (3L) reveals a prevalence of young fish of 24-35 cm size which are, perhaps, of the 1960 and 1959 broods.

In the southern regions - at the St. Pier Bank (3P) the greater quantity of young fish landed was of 7-13 cm size which proves the predominance of the 1961 brood specimens; at the Flemish Cape Bank (3M) the 1960 brood specimens seemed to be mostly spread (their sizes range from 19 to 26 cm, 24 cm being the most common one). A curve drawn for the region of the South-East slope BHE (3N) may show that the 1960 and 1959 brood specimens are most common among the fish taken there.

The Labrador-Newfoundland area, as a whole, is clearly marked by the predominance of the 1960 and 1959 broods, except for the St. Pier Bank where the 1961 brood is abundant. The areas of New Scotland (4V and 4W) reveal similar sizes of young fish. In the main, the takings have brought young fish from 14 to 35 cm. One can believe that young fish of these regions consist of 1960 and 1959 brood specimens. The 1961 specimens are scarce in those regions.

Distribution of Young Haddock (Fig.3)

Unlike cod, the areal of young haddock is very limited. During the period of investigation young haddock have not been found any farther to the North than 46°00 North latitude. Most young fish have been located at the South-West slope BHE (30). An obvious concentration of young haddock can be also observed at the George Bank (52).

All the rest of the regions of New Scotland are far from being rich in young haddock, there are no greater or less significant concentrations there. During the period under investigation, young haddock were at the depths of 50-250 m, no haddock have been found deeper than 300 m.

Sizes of Young Haddock (Fig.4)

Good information on sizes of young haddock has been gained for the regions of the South-West slope BHE and the George Bank (52). The data of the Barents sea young haddock age obtained by PINRO suggest an idea that the bulk of young fish of 28-35 cm size caught in the regions of the South-West slope BHE belongs to the 1959 brood, 31 cm being the most common size.

Judging by the sizes of fish found in the region of the George Bank one can state that that region is characterized of specimens of three broods (1961, 1960, 1959) those of the 1959 brood may slightly prevail.

Regions 4V and 4W cannot be fully described due to inadequate material gathered there. It is impossible to determine the brood of the young fish caught without making an assessment of their age.

Distribution of Young Bass

(Fig. 5)

Main accumulation of young bass has been found in the region of the South-West slope BHE (regions 30 and 3P), where young fish

are numerous at the depth of 175-260 m. The takings of young bass at the South slope of the St. Pier Bank in February, 1962 came up to 5,000,000 specimens per one-hour trawling (86 per cent the total amount of the 20 cm bass caught).

In all the rest of the regions either occasional specimens of young bass or no specimens have been noticed. The maximum takings of young bass to the East from the Hamilton Bank and at the southern slope of the Flemish Bank produced no more than 50 specimens per one-hour trawling.

C A P T I O N S

for the paper "PRELIMINARY ESTIMATION OF YOUNG COD,
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1. Fig. 5. Distribution of young bass of up to 12 cm size
2. Fig. 4. Sizes of young haddock as found in different regions
3. Fig.3. Distribution of young haddock of up to 36 cm size
4. Fig.2. Sizes of young cod as found in different regions
5. Fig.1. Distribution of young cod of up to 36 cm size

Table 1

AVERAGE TAKING OF YOUNG COD AND HADDOCK PER ONE-HOUR TRAWLING
in different regions from December, 1961 to March, 1962

1. Regions
2. Cod
3. Haddock
4. Number of trawlings
5. Total young fish
6. Average taking per one-hour trawling

AVERAGE TAKING OF YOUNG COD AND HADDOCK PER ONE- HOUR TRAWLING
IN DIFFERENT REGIONS FROM DECEMBER, 1961 to MARCH, 1962.

Table 1

Regions	Cod			Haddock		
	Number of trawlings	Total young fish	Average taking per one-hour trawling	Number of trawlings	Total young fish	Average taking per one-hour trawling
2J	31	1 848	60	—	—	—
2K	26	1 009	38	—	—	—
3L	27	701	26	—	—	—
3M	13	181	15	—	—	—
3N	12	162	13	—	—	—
3O	13	24	2	13	1189	91
3P	15	229	15	15	1	< 1
4V	9	238	26	9	78	9
4W	10	58	6	10	98	10
5Z	25	2	< 1	25	435	17

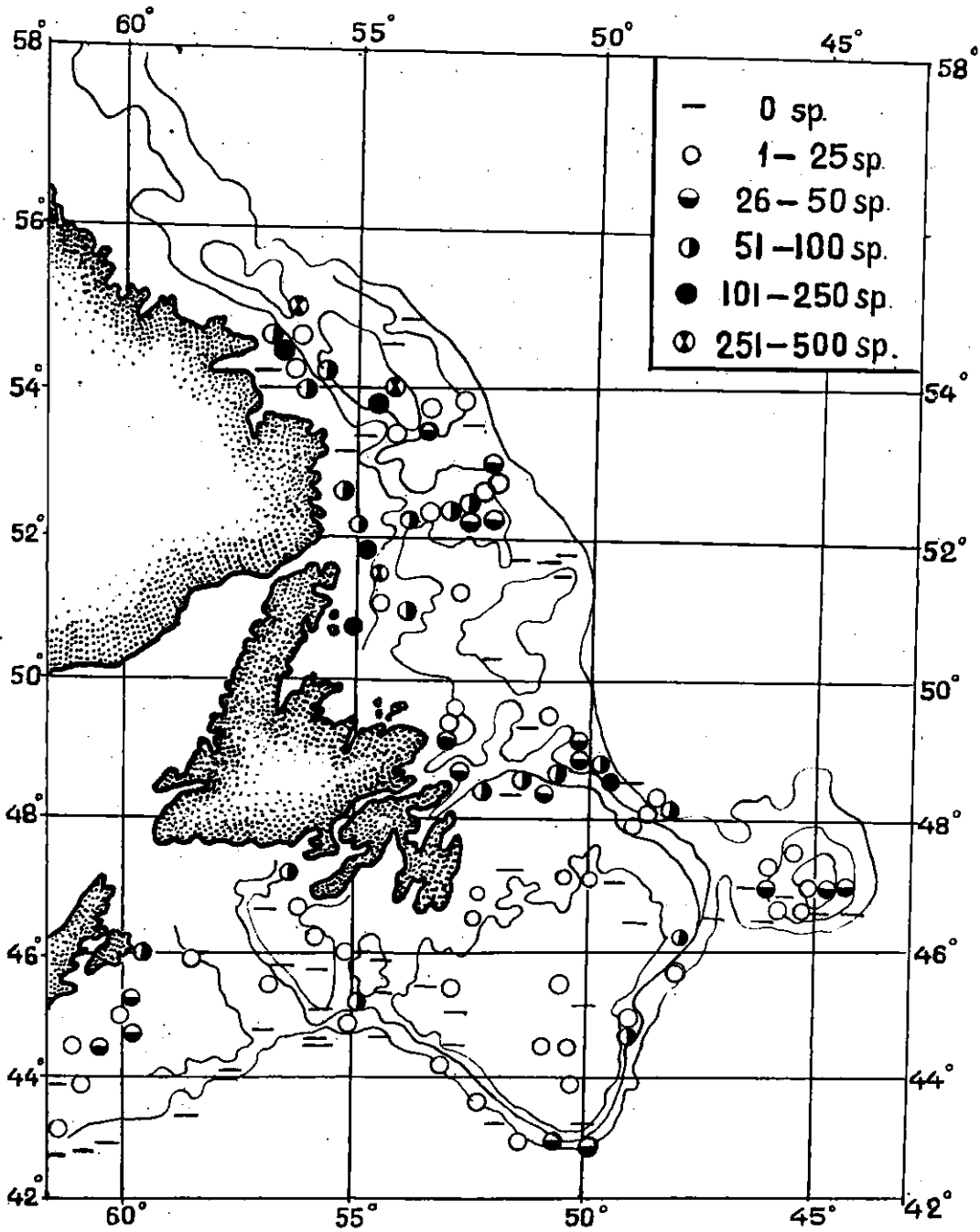


Fig. 1. Distribution of young cod of up to 36 cm size.

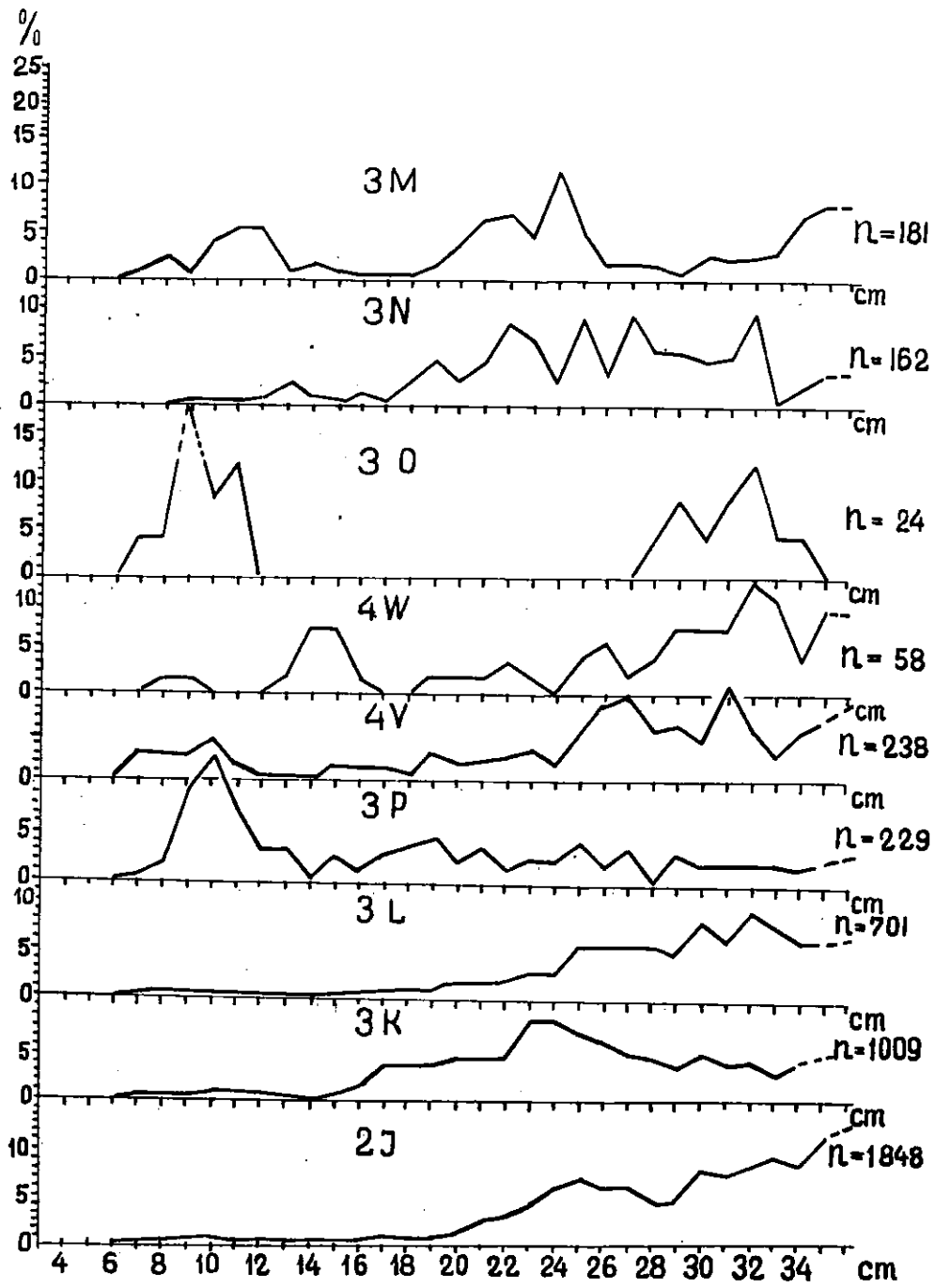


Fig. 2. Sizes of young cod as found in different regions.

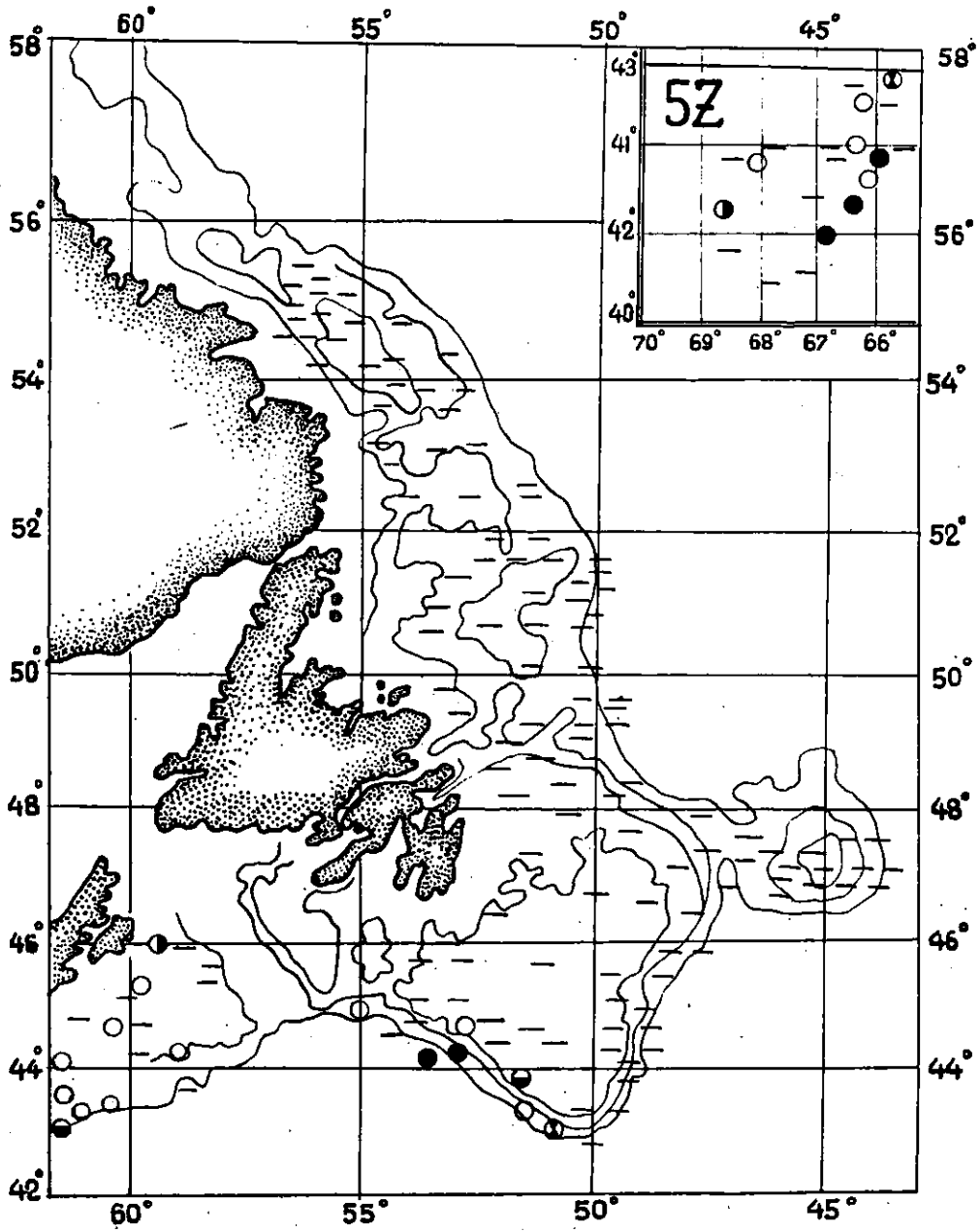


Fig. 3. Distribution of young haddock of up to 36 cm size.

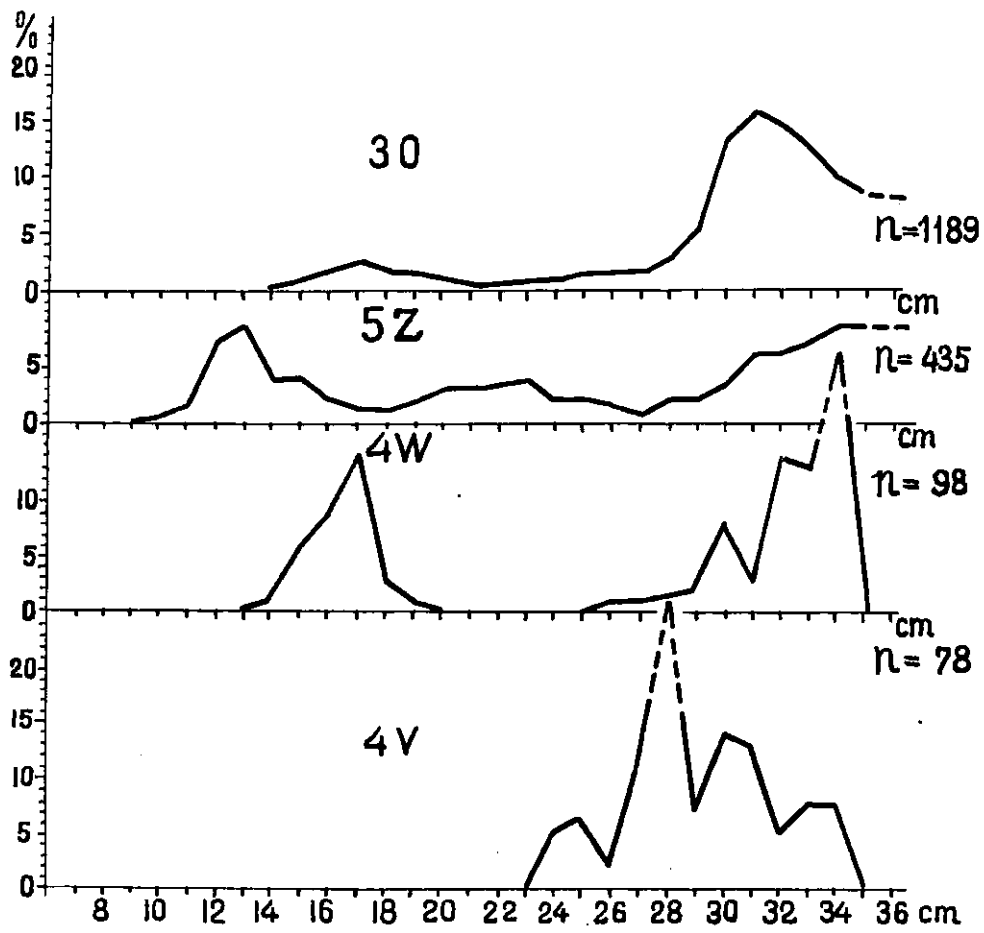


Fig. 4. Sizes of young haddock as found in different regions.

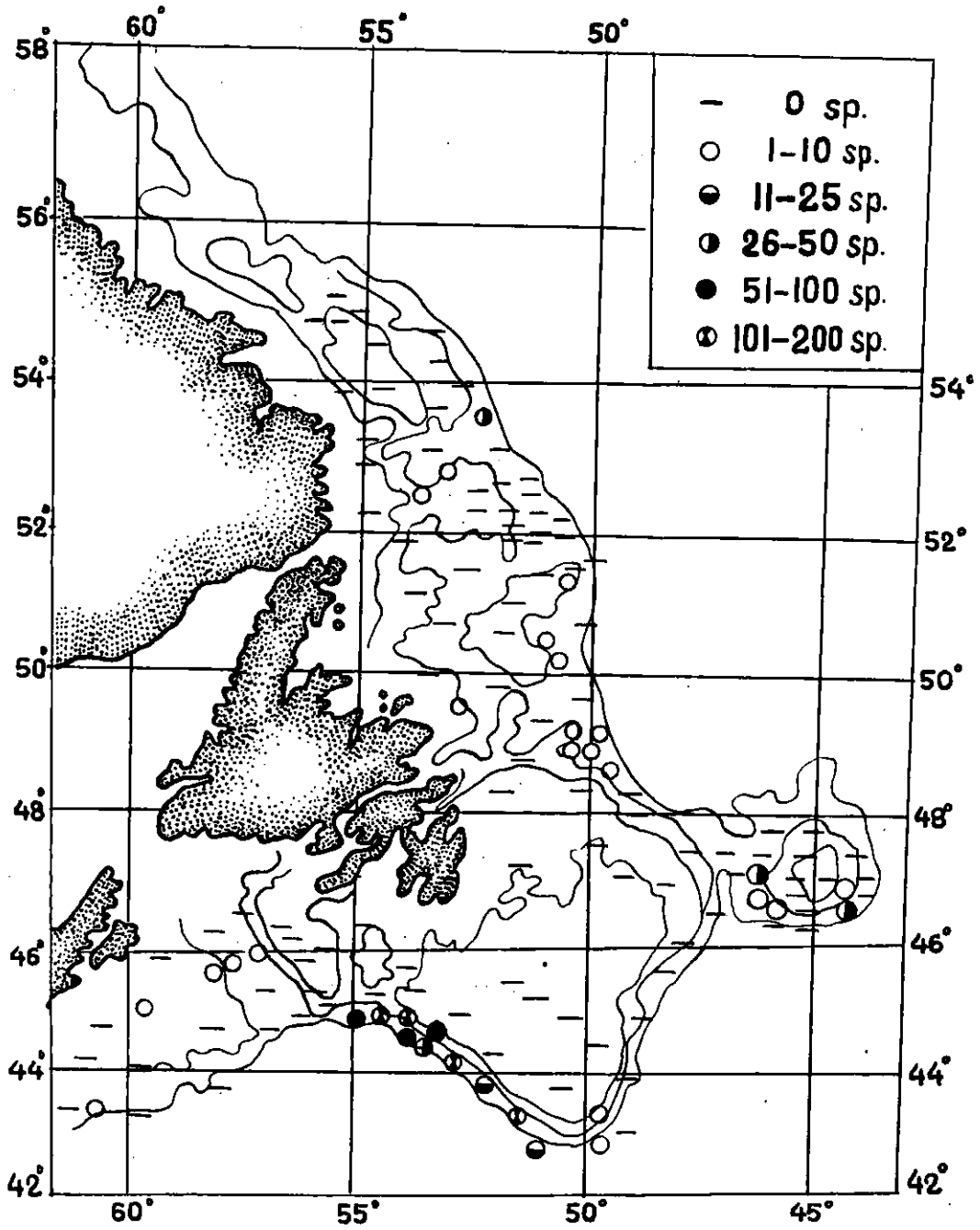


Fig 5. Distribution of young bass of up to 12 cm size.