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In the present paper some results from the Portuguese investigations made during the 1955 campaign in Greenland waters (Subarea 1) and in Labrador waters (Subarea 2) are summarized in preliminary form; all the observations refer to the cod (Gadus callarias L.). Only a part of the material and data collected has been elaborated up to this date; an additional paper will be published as soon as possible dealing with the remaining data, in particular those concerning Subarea 3 (Newfoundland).

(1) Subarea 1 (Greenland)

26 of the samples collected in this subarea, amounting to around 3,000 specimens, have been used for the determination of age by means of otoliths. Nearly all samples were from the fishery of the dory vessels using lines with hooks Nos.14 $\frac{1}{2}$  and 15 (Samples L). Only two samples were from trawlers (Samples A). The size of meshes in the cod-end of the trawls have a mean dimension of 117 mm.

The position of the samples from Subarea 1 are indicated on the attached map (Fig.1). The exact positions are given in Table 1.

(a) Composition of Samples by Age Groups; Sex Ratio

Fiskenaes - One single sample studied: G (L) 6; 18-VI-55 (Tab.2, Fig.2)

Age-group VIII is dominating (54.0%); and age-groups XIII and X are represented by respectively 16.0% and 13.0%. Age-group V is practically non-existent (1.0%). There is a clear predominance of females (56.0%).

Fyllas - Five samples studied: G (L) 2-G(L)3-G(L)5, 12-VI-/17-VI-55 (Tab.3, Fig.3) and G (A)2-G(A)3, 30-VI/1-VII-55 (Tab.4, Fig.4).

In the samples from the dory vessels age-group VIII predominates (56.0%); Gr.X constitutes 10.2% and Gr.XIII and Gr.VII are represented in nearly the same proportions (around 8%). Gr.V constitutes only 3.4%. There is a slight predominance of females (52.3%).

Age-group VIII is equally dominating in the samples from the trawlers (43.2%). Of the other groups, Gr.X is a little better represented (14.3%) than was the case in series G (L) 2-3-5. Gr.VII and Gr.XIII are practically of the same size (8.6 and 9.3%). Gr.V constitutes 3.6% of the sample.

The samples from Fyllas Bank are unique among the samples from the whole subarea in that the males are more abundant than the females, reaching a percentage of 61.1%. It is possible that this is caused by the selectivity of the gears used as the trawlers normally catch smaller fish.

Lille Hellefiske - Three samples were studied together: G (L) 7-G(L) 8-G(L) 10, 22-VI/28-VI-55 (Tab.5, Fig.5).

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Gr.VIII is less abundant than in the previous samples (37.1%). Gr.XIII is more abundant (10.2%); Gr.X reaches 13%; Gr.VII 6.2%; Gr.V is practically non-existent (1.5%). The females are slightly dominating (52.4%).

Helders - The following samples were studied in their total: G(L)12-G(L)13, 30-VI/2-VII-55 (Tab.5, Fig.6) and an isolated sample, G(L)43, 13-VIII-55 (Tab.7, Fig.7).

In the first series the most abundant age-groups are VIII(51.8%) and XIII (10.5%). The other age-groups are less abundant, Gr.X and Gr.VII with around 6-8%. Gr.V is nearly completely lacking (0.5%). The females dominate the samples (56.4%).

In sample G (L) 43 the frequency of the various age-groups is of the same order with the exception that Gr.V is more strongly represented (10.1%).

The proportion between males and females is rather even (50.6% and 49.4% respectively).

Store Hellefiske - The following samples were studied in groups or isolated: G (L) 39-40-42, 8-VIII/12-VIII-55, (Tab.8, Fig.8); G(L) 25-26, 19-VII/20-VII-55 (Tab.9, Fig.9); G (L) 30, 25-VII-55, (Tab.10, Fig.10); G (L) 33, 29-VII-55 (Tab.11, Fig.11), G (L) 32-35-36, 27-VII/3-VIII-55, (Tab.12, Fig.12), G (L) 15-18-19, 5-VII/11-VII-55 (Tab.13, Fig.13), G (L) 28, 23-VII-55 (Tab.14, Fig.14) G (L) 21-22, 13-VII/14-VII-55 (Tab.15, Fig.15).

In this series of samples Gr.VIII continues to be the dominant one (40-46%) with the exception of sample G (L) 28 in which it amounts to only 36.2%. Gr.X varies between 4 and 10%. Gr.XIII is practically non-existent in some samples (2% in G (L) 33 and 28), but in others has values around 11%. Gr.VII varies in most of the samples between 4 and 10%, being however 18% in G (L) 28. Gr.V has lower values, below 10% in four samples, in sample G (L) 28, however, it reaches 21.9%.

In all samples there is a dominance of the females (52-59%), except in G (L) 28 in which the sex ratio is even (50.5% males, 49.5% females) which can be caused by a stronger representation of Gr.V, as already mentioned.

Results from the Summary of all Samples studied from Greenland in 1955:

A high frequency of age-group VIII (the 1947 year-class) however less rich in the northern than in the southern part of the subarea. The frequencies of age-groups VII, X and XIII are somewhat irregular but always weak.

As to the sex ratio, there is a slight dominance of the females, except in the sample from trawlers on Fyllas Bank.

(b) Age at First Maturity

The study of the age at first maturity is based on the most abundant age-groups in the material (Gr.VII, VIII, X and XIII) and by observation of the spawning ring on the otoliths (Tab.16, Fig.16). The observations are from the Store Hellefiske Bank in the north (N), and from Helders Bank, Lille Hellefiske Bank, Fyllas Bank and Fiskenaes Bank in the south (S). All individuals with questionable determination of age at first maturity were omitted, their percentages in relation to the number considered are indicated in Table 16.

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Age-Group VII (1947 year-class) - Most of the individuals (more than 80%) have not reached the first maturity, they are still immature. The males, contrary to what normally is the case, seem to show a certain retardation in relation to the females, in particular in the northern zone (3.5% of females with a first spawning in the sixth year).

Age-Group VIII (1947 year-class) - The first spawning is spread over the sixth to eighth year; only ca. 30% seem to have not yet spawned. The majority of the males spawned for the first time in their seventh year and a slightly higher percentage is found for males than for females in the sixth year.

Age-Group X (1945 year-class) - Practically all individuals of this age-group have had at least one spawning period, except a small percentage of individuals (5%) in the northern zone. A greater precocity of males in both zones.

Age-Group XIII (1942 year-class) - The first spawning is found to occur from the sixth to eleventh year of age. In the southern zone the first maturity seems to come at the same age for both males and females. In the northern zone the males, however, show a slightly greater precocity than the females.

(c) Size and Ratio Length-Weight

The age distribution and the mean length of the males and of the females of the various year-classes (age-groups) are summarized in Tables 2-15. The ratio length-weight for the different size groups was studied in a certain number of specimens. The results obtained by 5 cm. groups are shown in Table 17.

No appreciable difference between the weights of males and of females within this subarea for the size groups studied (50-100 cm.) was found.

(2) Subarea 2 (Labrador)

Of the four samples, all from trawlers (mean size of meshes of cod-end around 117 mm.) two were studied for the determination of age through use of otoliths.

On the attached map (Fig.17) the localities of these samples are shown. See also the following table:

<u>Sample</u>	<u>Date</u>	<u>Lat.</u>	<u>Long.</u>
L(A)-1	30-X-55	54°19'N	54°11'W
L(A)-2	31-X-55	54°35'N	54°40'W
L(A)-3	1-XI-55	54°30'N	54°30'W
L(A)-4	2-XI-55	54°28'N	54°31'W

(a) Composition of Samples as to Age: Sex-Ratio

Hamilton Bank - Two samples were studied: L (A) 2 - L (A) 3, 31-X/1-XI-55 (Tab.18, Fig.18).

Age-groups VIII (19.7%) and X (17.3%) are dominating; Gr.VII is represented with 15.3%. Grs.VI and IX are represented by practically the same percentage (around 10%). All the remaining age-groups are very poorly represented or nearly non-existent (Grs.III, IV, XII, XIII and XIV).

The proportion of males (58.6%) is superior to that of the females, this being contrary to what is observed in Subarea 1

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(c) Growth; Ratio Length-Weight

The growth in Subarea 2 off Labrador is rather slow (Table 18), the growth over a period of ten years being around 24 cm. in total (age-group III, 32.5 cm; age-group XIII, 56.5 cm.). From age-group X and upwards, growth is very much reduced, almost at a standstill.

The weight by 5 cm. groups was investigated in the following number of specimens:

Length Group (cm.)	- Males -		- Females -	
	No.Spec.	Kgs.	No.Spec.	Kgs.
47	10	1.033	-	-
52	21	1.339	22	1.247
57	17	1.533	15	1.596

The ratio was of the same order as in Subarea 1 for the 52 cm. length group (males - Greenland = 1.296 Kgs; Labrador = 1.339 kgs.). In the 57 cm. size group the ratio is, however, higher than in Greenland (males - Greenland = 1.789 kgs.; Labrador = 1.533 kgs.; females - Greenland = 1.700 kgs., Labrador = 1.596 kgs.).

(d) Size Distribution

The size distribution by 5 cm. groups is shown for the four Labrador samples in Fig.19.

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Table 1. List of Samples investigated from Portuguese dory vessels and trawlers in Subarea 1, 1955. L - dory vessels, A - trawlers.

Sample Dory vessel G (L)	Date	Bank	Lat.	Long.
2	12-6-55	Fylla B.	64°01' N	53°02' W
3	13-6-55	" "	64°07' N	53°06' W
5	17-6-55	" "	63°54' N	52°24' W
6	18-6-55	Fiskenaes B.	63°00' N	52°00' W
7	22-6-55	Lille Hellef. B.	65°10' N	53°38' W
8	23-6-55	" " "	65°09' N	53°40' W
10	28-6-55	" " "	65°07' N	53°25' W
12	30-6-55	Helders B.	66°06' N	54°20' W
13	2-7-55	" "	66°08' N	54°15' W
15	5-7-55	Store Hellef. B.	67°35' N	54°46' W
18	9-7-55	" " "	67°40' N	55°02' W
19	11-7-55	" " "	67°46' N	55°00' W
21	13-7-55	" " "	67°59' N	54°43' W
22	14-7-55	" " "	68°02' N	54°39' W
25	19-7-55	" " "	67°22' N	54°27' W
26	20-7-55	" " "	67°20' N	54°21' W
28	23-7-55	" " "	67°48' N	54°39' W
30	25-7-55	" " "	67°15' N	54°18' W
32	27-7-55	" " "	67°28' N	54°04' W
33	29-7-55	" " "	67°18' N	55°05' W
35	2-8-55	" " "	67°20' N	54°14' W
36	3-8-55	" " "	67°26' N	54°12' W
39	8-8-55	" " "	67°06' N	54°42' W
40	10-8-55	" " "	67°04' N	54°46' W
42	12-8-55	" " "	66°52' N	54°34' W
43	13-8-55	Helders B.	66°23' N	54°18' W
Trawler G (A)	Date	Bank	Lat.	Long.
2	30-6-55	Fylla	63°40' N	52°50' W
3	1-7-55	"	64°00' N	53°00' W

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	-	-	-	100.0	56.0	1	1.0	56.0
1949	VI	100.0	50.0	-	-	-	1	1.0	60.0
1948	VII	20.0	63.0	80.0	64.7	5	5.0	63.8	
1947	VIII	44.5	68.5	55.5	70.4	54	54.0	69.4	
1946	IX	100.0	71.5	-	-	4	4.0	71.5	
1945	X	38.5	77.7	61.5	75.5	13	13.0	76.6	
1944	XI	50.0	75.0	50.0	86.0	2	2.0	80.5	
1943	XII	-	-	100.0	75.0	2	2.0	75.0	
1942	XIII	50.0	87.0	50.0	82.3	16	16.0	84.7	
1941	-	-	-	-	-	-	-	-	
1940	-	-	-	-	-	-	-	-	
1939	XVI	-	-	100.0	87.0	1	1.0	87.0	
1938	-	-	-	-	-	-	-	-	
1937	-	-	-	-	-	-	-	-	
1936	XIX	-	-	100.0	81.0	1	1.0	81.0	
% in Sample			44.0%		56.0%		Obs.100		

Table 2 - Age distribution and mean lengths in a sample of cod from Fiskenesk Bank, 63°00'N, 52°00'W, G (L) 6, 18-6-1955.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	54.5	57.8	45.5	52.8	11	3.4	55.5	
1949	VI	77.8	63.0	22.2	67.0	9	2.8	63.9	
1948	VII	46.4	62.3	53.6	66.8	28	8.6	34.5	
1947	VIII	49.2	73.4	50.8	70.0	183	56.0	71.7	
1946	IX	36.8	72.0	63.2	74.4	19	5.8	73.2	
1945	X	42.4	74.7	57.6	77.8	33	10.2	76.3	
1944	XI	50.0	75.0	50.0	78.2	10	3.1	77.6	
1943	XII	42.8	74.3	57.2	77.8	7	2.2	76.3	
1942	XIII	39.1	80.3	60.9	84.3	23	7.1	82.7	
1941	XIV	66.7	82.5	33.3	87.0	3	0.9	84.0	
1940	-	-	-	-	-	-	-	-	
1939	-	-	-	-	-	-	-	-	
1938	-	-	-	-	-	-	-	-	
1937	-	-	-	-	-	-	-	-	
1936	XIX	100.0	80.0	-	-	1	0.3	80.0	
% in Sample			47.7%		52.3%		Obs.327		

Table 3 - Age distribution and mean lengths in 3 samples of cod from Fylla Bank, dory vessels: G (L) 2, 12-6-55, 64°01'N, 53°02'W; G (L) 3, 13-6-1955, 64°07'N, 53°06'W; G (L) 5, 17-6-55, 63°54'N, 52°24'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1951	IV	75.0	44.6	25.0	38.0	4	2.6	41.3	
1950	V	64.4	48.8	35.0	49.6	14	8.6	49.2	
1949	VI	-	-	100.0	59.0	2	1.2	59.0	
1948	VII	71.3	63.3	28.7	66.5	14	8.6	64.9	
1947	VIII	52.9	64.1	47.1	69.7	70	43.2	66.9	
1946	IX	75.0	69.0	25.0	71.0	4	2.4	70.0	
1945	X	62.5	72.4	37.5	77.5	24	14.8	74.9	
1944	XI	75.0	74.3	25.0	65.0	4	2.4	69.7	
1943	XII	66.6	76.3	33.3	74.3	9	5.5	75.3	
1942	XIII	73.3	71.4	26.7	71.2	15	9.3	71.3	
1941	XIV	-	-	100.0	79.0	1	0.6	79.0	
1939	-	-	-	-	-	-	-	-	
1938	XVII	-	-	100.0	97.0	1	0.6	97.0	
% in Sample			61.1%		38.9%		Obs.162		

Table 4 - Age distribution and mean lengths in 2 samples of cod from Fylla Bank, trawlers: G (A) 2, 30-6-55, 66°06'N, 54°20'W; G (A) 3, 1-7-55, 64°00'N, 53°00'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	50.0	56.0	50.0	58.0	4	1.3	57.0	
1949	VI	50.0	55.0	50.0	62.0	2	0.7	58.0	
1948	VII	52.0	66.0	47.4	68.2	29	3.2	67.0	
1947	VIII	47.8	69.1	52.2	71.0	113	7.1	70.5	
1946	IX	23.0	75.3	77.0	70.5	13	4.3	73.0	
1945	X	52.5	75.7	47.5	78.8	40	13.1	77.3	
1944	XI	43.7	75.5	56.3	78.4	16	5.2	76.9	
1943	XII	60.0	76.5	40.0	78.0	20	6.5	77.3	
1942	XIII	46.4	80.3	53.6	79.1	56	18.2	80.0	
1941	XIV	10.0	80.0	90.0	82.8	10	3.3	81.4	
1940	XV	80.0	80.7	20.0	86.0	5	1.6	84.3	
1939	XVI	60.0	85.3	40.0	86.5	5	1.6	85.9	
1938	-	-	-	-	-	-	-	-	
1937	-	-	-	-	-	-	-	-	
1936	XIX	100.0	87.0	-	-	1	0.4	87.0	
1935	-	-	-	-	-	-	-	-	
1934	XXI	100.0	86.0	-	-	1	0.4	86.0	
% in Sample			47.6%	52.4%		Obs. 305			

Table 5 - Age distribution and mean lengths in 3 samples of cod from Lille Helleflaks Bank, dory vessels: G (L) 7, 22-6-55, 65°10'N, 53°38'W; G (L) 8, 23-6-55, 65°09'N, 53°40'W; G (L) 10, 28-6-55, 65°07'N, 53°25'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	100.0	56.0	-	-	1	0.5	56.0	
1949	VI	50.0	62.0	50.0	64.0	2	1.0	63.5	
1948	VII	37.9	66.3	62.1	68.5	16	8.4	67.4	
1947	VIII	38.4	69.9	61.6	70.8	99	51.8	70.4	
1946	IX	50.0	69.8	50.0	71.0	16	8.4	70.4	
1945	X	46.2	75.6	53.8	76.2	13	6.8	75.9	
1944	XI	33.3	68.5	66.7	77.0	6	3.1	72.8	
1943	XII	51.2	75.0	42.8	76.3	7	3.7	75.6	
1942	XIII	65.0	79.4	35.0	83.0	20	10.5	81.2	
1941	XIV	60.0	77.6	40.0	79.5	5	2.6	78.5	
1940	-	-	-	-	-	-	-	-	
1939	-	-	-	-	-	-	-	-	
1938	XVII	-	-	100.0	136.07	1	0.5	136.07	
1937	-	-	-	-	-	-	-	-	
1936	XIX	100.0	89.0	100.0	86.0	2	1.0	87.5	
1935	XX	100.0	94.0	-	-	1	0.5	94.0	
1934	XXI	100.0	103.0	-	-	1	0.5	103.0	
% in Sample			43.6%	56.4%		Obs. 191			

Table 6 - Age distribution and mean lengths in 2 samples of cod from Halders Bank, dory vessels: G (L) 12, 30-6-55, 66°06'N, 54°20'W; G (L) 13, 2-7-55, 66°08'N, 54°15'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	75.0	57.1	25.0	58.0	8	10.1	57.5	
1949	VI	66.7	62.0	33.3	65.0	3	3.7	63.5	
1948	VII	50.0	65.0	50.0	69.6	6	7.6	67.3	
1947	VIII	50.0	67.9	50.0	71.2	34	42.9	69.5	
1946	IX	20.0	71.0	80.0	75.5	5	6.4	73.3	
1945	X	45.4	74.0	54.6	80.3	11	13.9	77.2	
1944	XI	-	-	100.0	83.0	1	1.3	83.0	
1943	XII	66.6	79.0	33.4	75.0	3	3.7	77.5	
1942	XIII	60.0	78.6	40.0	85.0	5	6.4	81.8	
1941	XIV	100.0	85.0	-	-	1	1.3	85.0	
1940	-	-	-	-	-	-	-	-	
1939	XVI	-	-	100.0	110.0	1	1.3	110.0	
1938	XVII	-	-	100.0	84.0	1	1.3	84.0	
% in Sample			50.6%	49.4%		Obs. 79			

Table 7 - Age distribution and mean lengths in a sample of cod from Halders Bank, dory vessel: G (L) 43, 13-8-55, 66°23'N, 54°18'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	67.9	56.0	32.1	55.5	19	6.8	55.8	
1949	VI	21.0	56.6	78.6	58.0	14	5.2	57.3	
1948	VII	23.8	65.0	76.2	69.6	21	7.5	67.3	
1947	VIII	44.8	70.6	55.2	72.3	134	47.8	71.9	
1946	IX	18.7	72.6	81.3	75.8	16	5.7	74.2	
1945	X	40.0	77.2	60.0	78.6	30	10.7	77.9	
1944	XI	75.0	80.6	25.0	80.0	8	2.9	80.3	
1943	XII	71.4	83.2	28.6	82.0	7	2.5	82.6	
1942	XIII	62.5	84.5	37.5	85.2	16	5.7	84.8	
1941	XIV	75.0	85.6	25.0	94.0	4	1.4	89.8	
1940	XV	75.0	88.0	25.0	107.0	4	1.4	97.5	
1939	XVI	100.0	83.0	-	-	2	0.7	83.0	
1938	XVII	-	-	100.0	94.0	2	0.7	94.0	
1937	-	-	-	-	-	-	-	-	
1936	XIX	-	-	100.0	103.0	1	0.4	103.0	
1935	XX	-	-	100.0	102.0	1	0.4	102.0	
1934	XXI	100.0	89.0	-	-	1	0.4	89.0	
% in Sample			44.8%		55.2%			Obs.280	

Table 8 - Age distribution and mean lengths in 3 samples of cod from Store Hellefiske Bank, dory vessels: G (L) 39, 8-8-55, 67°06'N, 54°42'W; G (L) 40, 10-8-55, 67°04'N, 54°46'W; G (L) 42, 12-8-55, 66°52'N, 54°43'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1951	IV	-	-	100.0	47.0	1	0.6	47.0	
1950	V	66.7	53.8	33.3	55.6	9	5.2	55.0	
1949	VI	75.0	60.0	25.0	62.0	8	4.6	61.0	
1948	VII	42.1	67.0	57.9	71.0	19	10.9	69.0	
1947	VIII	46.9	70.6	53.1	73.2	98	56.6	71.9	
1946	IX	71.4	72.8	28.6	77.5	7	4.0	75.2	
1945	X	38.5	83.4	61.5	83.5	13	7.5	83.5	
1944	XI	100.0	79.5	-	-	4	2.3	79.5	
1943	XII	100.0	87.5	-	-	1	0.6	87.5	
1942	XIII	55.0	85.5	44.4	91.8	9	5.2	88.7	
1941	XIV	100.0	97.0	-	-	1	0.6	97.0	
1940	XV	100.0	88.0	-	-	1	0.6	88.0	
1939	XVI	100.0	95.0	-	-	1	0.6	95.0	
% in Sample			52.0%		48.0%			Obs.173	

Table 9 - Age distribution and mean lengths in 2 samples of cod from St. Hellefiske Bank, dory vessels: G (L) 25, 19-7-55, 67°22'N, 54°27'W; G (L) 26, 20-7-55, 67°20'N, 54°21'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	-	-	100.0	58.0	2	4.0	58.0	
1949	VI	33.3	59.0	66.7	56.5	3	6.0	57.8	
1948	VII	40.0	66.5	60.0	65.3	5	10.0	65.9	
1947	VIII	50.0	70.3	50.0	72.0	26	52.0	71.2	
1946	IX	100.0	77.6	-	-	3	6.0	77.6	
1945	X	50.0	93.0	50.0	87.0	2	4.0	90.0	
1944	-	-	-	-	-	-	-	-	
1943	XII	100.0	81.0	-	-	2	4.0	81.0	
1942	XIII	20.0	88.0	80.0	84.0	5	10.0	86.0	
1941	XIV	100.0	85.0	-	-	1	2.0	85.0	
1940	-	-	-	-	-	-	-	-	
1939	XVI	-	-	100.0	96.0	1	2.0	96.0	
% in Sample			48.0%		52.0%			Obs.50	

Table 10 - Age distribution and mean lengths in 1 sample of cod from St. Hellefiske Bank, dory vessel: G (L) 30, 25-7-55, 67°15'N, 54°18'W.



Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	60.0	57.3	40.0	59.0	5	10.0	58.2	
1949	VI	55.3	67.0	66.7	61.0	3	6.0	64.0	
1948	VII	-	-	100.0	69.0	2	4.0	69.5	
1947	VIII	48.2	69.4	51.8	70.0	27	54.0	69.9	
1946	IX	50.0	71.5	50.0	74.5	4	8.0	73.0	
1945	X	25.0	68.0	75.0	75.3	4	8.0	72.0	
1944	XI	33.3	77.0	66.7	79.5	3	6.0	78.3	
1943	-	-	-	-	-	-	-	-	
1942	XIII	100.0	85.0	-	-	1	2.0	85.0	
1941	-	-	-	-	-	-	-	-	
1940	-	-	-	-	-	-	-	-	
1939	-	-	-	-	-	-	-	-	
1938	XVII	100.0	100.0	-	-	1	2.0	100.0	
% in Sample			48.0%		52.0%		Obs. 50		

Table 11 - Age distribution and mean length in 1 sample of cod from St. Hellefisha Bank, dory vessel: G (L) 33, 29-7-55, 67°18'N, 55°05'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1951	IV	50.0	50.0	50.0	51.0	2	0.6	50.5	
1950	V	47.1	53.3	52.9	55.8	34	11.3	54.5	
1949	VI	47.0	59.4	53.0	58.3	17	5.7	58.9	
1948	VII	36.7	66.5	63.3	67.7	30	10.0	67.1	
1947	VIII	46.0	69.4	54.0	74.3	146	48.6	70.4	
1946	IX	68.7	72.3	31.3	75.2	16	5.3	73.8	
1945	X	42.8	76.2	57.2	77.8	14	4.6	77.0	
1944	XI	36.4	80.5	63.6	82.5	11	3.6	81.5	
1943	XII	55.5	76.0	44.5	87.3	9	3.0	81.6	
1942	XIII	37.5	85.0	62.5	85.4	8	2.7	85.2	
1941	XIV	40.0	85.5	60.0	86.6	5	1.7	86.1	
1940	XV	-	-	100.0	92.0	2	0.7	92.0	
1939	XVI	100.0	92.0	-	-	2	0.7	92.0	
1938	XVII	50.0	95.0	50.0	89.0	2	0.6	92.0	
1937	-	-	-	-	-	-	-	-	
1936	XIX	100.0	94.0	-	-	1	0.3	94.0	
1935	XX	100.0	83.0	-	-	1	0.3	83.0	
% in Sample			46.3%		53.7%		Obs. 300		

Table 12 - Age distribution and mean lengths in 3 samples of cod from St. Hellefisha Bank, dory vessels: G (L) 32, 27-7-55, 67°28'N, 54°04'W; G (L) 35, 2-8-55, 67°20'N, 54°14'W; G (L) 36, 3-8-55, 67°26'N, 54°12'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	54.5	55.4	45.5	55.3	44	12.6	55.4	
1949	VI	50.0	60.3	50.0	62.6	6	1.7	62.0	
1948	VII	24.0	64.6	76.0	65.6	25	7.2	65.1	
1947	VIII	40.0	68.8	60.0	71.4	172	49.3	70.0	
1946	IX	31.3	76.6	68.7	75.9	16	4.6	76.3	
1945	X	53.2	77.2	46.8	79.5	32	9.2	78.4	
1944	XI	47.1	78.4	52.9	84.1	17	4.9	81.3	
1943	XII	57.1	79.3	42.9	83.0	7	2.0	81.2	
1942	XIII	50.0	83.4	50.0	87.0	22	6.3	85.3	
1941	XIV	100.0	80.5	-	-	2	0.6	88.5	
1940	XV	100.0	83.0	-	-	1	0.3	83.0	
1939	-	-	-	-	-	-	-	-	
1938	-	-	-	-	-	-	-	-	
1937	XVII	100.0	94.0	-	-	1	0.3	94.0	
1936	XIX	-	-	100.0	94.0	2	0.6	94.0	
1935	-	-	-	-	-	-	-	-	
1934	XXI	100.0	91.5	-	-	2	0.6	91.5	
% in Sample			43.6%		56.4%		Obs. 349		

Table 13 - Age distribution and mean lengths in 3 samples of cod from St. Hellefisha Bank, dory vessels: G (L) 15, 5-7-55, 67°35'N, 54°46'W; G (L) 18, 9-7-55, 67°40'N, 55°02'W; G (L) 19, 11-7-55, 67°46'N, 55°00'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	52.2	53.2	47.8	54.0	35	21.9	54.1	
1949	VI	75.0	53.0	25.0	53.0	4	3.8	63.8	
1948	VII	42.0	65.6	57.7	65.0	19	18.1	66.1	
1947	VIII	52.7	69.2	47.3	69.2	30	36.2	69.2	
1946	IX	33.3	74.0	66.7	74.3	6	5.7	74.2	
1945	X	33.3	75.5	66.7	73.5	6	5.7	74.5	
1944	XI	100.0	77.0	-	-	2	1.9	77.0	
1943	XII	50.0	81.0	50.0	77.0	2	1.9	79.0	
1942	XIII	50.0	72.0	50.0	85.0	2	1.9	78.5	
1941	XIV	-	-	100.0	99.0	1	0.9	99.0	
1940	XV	100.0	90.0	-	-	1	0.9	90.0	
1939	XVI	100.0	88.0	-	-	1	0.9	88.0	
% in Sample			50.5%		49.5%		Obs. 105		

Table 14 - Age distribution and mean lengths in 1 sample of cod from St.Hellefiske Bank, dory vessel: G (L) 28, 23-7-55, 67°48'N, 54°39'W.

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1950	V	42.1	54.4	57.9	56.5	19	7.6	56.0	
1949	VI	33.3	58.0	66.7	63.0	3	1.2	60.5	
1948	VII	37.5	68.7	62.5	69.0	24	9.6	68.9	
1947	VIII	40.2	70.0	59.8	73.1	102	41.0	71.5	
1946	IX	43.7	75.0	56.3	78.3	16	6.4	77.2	
1945	X	50.0	80.2	50.0	82.8	24	9.6	81.5	
1944	XI	60.0	81.1	40.0	89.8	15	6.0	85.5	
1943	XII	14.3	79.0	85.7	88.6	7	2.8	84.0	
1942	XIII	28.6	82.8	71.4	94.1	28	11.2	88.5	
1941	XIV	42.9	93.0	57.1	90.7	7	2.8	91.8	
1940	XV	-	-	100.0	98.0	1	0.4	98.0	
1939	XVI	100.0	86.0	-	-	1	0.4	86.0	
1938	-	-	-	-	-	-	-	-	
1937	-	-	-	-	-	-	-	-	
1936	XIX	100.0	85.0	-	-	1	0.4	85.0	
1935	-	-	-	-	-	-	-	-	
1934	XXI	100.0	114.0	-	-	1	0.4	114.0	
% in Sample			40.9%		59.1%		Obs. 249		

Table 15 - Age distribution and mean lengths in 2 samples of cod from St.Hellefiske Bank, dory vessels: G (L) 21, 13-7-55, 67°59'N, 54°43'W; G (L) 22, 14-7-55, 68°02'N, 54°39'W.

		Age Group at 1st Spawning							
		V	VI	VII	Imm.	Tot.	?	Tot.	
<u>Males</u>	Age-Group VII	S No.	-	-	2	26	28	-	28
		%	-	-	7.1	92.8	99.9	0	49
<u>Females</u>	Age-Group VII	S No.	-	0	8	32	40	6	46
		%	-	-	20.0	80.0	100.0	13.0	96
<u>Males</u>	Age-Group VIII	S No.	-	3	9	74	86	10	96
		%	-	3.5	10.5	86.0	100.0	10.4	

		Age Group at 1st Spawning								
		V	VI	VII	VIII	Imm.	Tot.	?	Tot.	
<u>Males</u>	Age-Group VIII	S No.	-	11	108	30	66	215	9	224
		%	-	5.1	50.2	14.0	30.7	100.0	4.0	327
<u>Females</u>	Age-Group VIII	S No.	-	16	140	48	102	306	21	327
		%	-	5.2	45.8	15.7	33.3	100.0	6.4	260
<u>Males</u>	Age-Group IX	S No.	-	9	80	73	75	237	23	260
		%	-	3.8	33.8	30.8	31.6	100.0	8.8	416
<u>Females</u>	Age-Group IX	S No.	-	10	99	122	141	372	44	416
		%	-	2.7	26.6	32.8	37.9	100.0	10.6	

Table 16 - Cod, West Greenland, Age at First Spawning of Males and Females of the More Abundant Age-Groups VII, VIII, X and XIII from Samples from June-August 1955. S = Helder, Lille Hellefiske, Nylles and Eskanaes Banks; N = Store Hellefiske Bank.

Males		Age Group at 1st Spawning									
		V	VI	VII	VIII	IX	X	Imm.	Tot.	?	Tot.
Age-Group X	S No.	4	19	20	5			2.0	49	2	51
	%	8.2	34.6	40.8	10.4			4.0	100.0	3.4	
Age-Group X	N No.	5	24	9	5			3	3	2	57
	%	9.1	43.6	30.9	9.1	1.8		5.4	100.0	3.5	
Females	S No.	2	10	32	17			0	57	2	59
	%	3.5	17.5	56.1	22.8				100.0	3.4	
Age-Group X	N No.	3	19	27	15			3	67	2	69
	%	4.5	28.4	40.3	22.4			4.5	100.0	2.9	

Males		Age Group at 1st Spawning										
		V	VI	VII	VIII	IX	X	XI	Imm.	Tot.	?	Tot.
Age-Group XIII	S No.	8	32	15	3			1		59		59
	%	13.6	54.2	25.4	5.0			1.7		99.9	0	
Age-Group XIII	N No.	9	19	7	2			1		38	2	40
	%	23.7	50.0	18.4	5.3			2.6		100.0	5.0	
Females	S No.	7	29	12	11			1		60	1	61
	%	11.7	48.3	20.0	18.3			1.7		100.0	1.6	
Age-Group XIII	N No.	1	23	17	6			1		48	3	51
	%	2.1	47.9	35.4	12.5			2.1		100.0	5.9	

Table 16 - Cod, West Greenland, Age at First Spawning of Males and Females of the More Abundant (cont'd) Age-Groups VII, VIII, X and XIII from Samples from June-August 1955. S = Holders, Lille Hellefiske, Fyllas and Fiskemass Banks; N = Store Hellefiske Bank.

Length-Group (cm.)	- Males -		- Females -	
	No. Spec.	Kgs.	No. Spec.	Kgs.
52	10	1.296	-	-
57	25	1.789	21	1.700
62	19	2.136	32	2.348
67	64	2.696	55	2.753
72	77	3.337	97	3.300
77	40	3.919	63	3.944
82	19	4.644	32	4.864
87	18	5.877	22	6.231
92	-	-	12	6.666
97	-	-	8	7.835

Table 17 - Cod, West Greenland, June-Aug. 1955. Ratio length (5 cm. groups) and weight (kgs.)

Year	Class	Age	- Males -		- Females -		- Males & Females -		
			%	M.Length (cm.)	%	M.Length (cm.)	Total	%	M.Length (cm.)
1952	III	100.0	32.5	-	-	2	0.8	32.5	
1951	IV	80.0	38.7	20.0	39.0	5	2.0	38.9	
1950	V	72.2	44.8	27.8	43.0	18	7.2	44.0	
1949	VI	59.2	46.6	40.8	47.6	27	10.8	47.1	
1948	VII	50.0	50.1	50.0	51.2	38	15.3	51.0	
1947	VIII	63.3	52.4	36.7	53.1	49	19.7	52.8	
1946	IX	57.1	54.4	42.9	55.0	28	11.2	54.7	
1945	X	53.5	55.3	46.5	55.2	43	17.3	55.3	
1944	XI	48.3	55.2	51.7	58.8	29	11.6	57.0	
1943	XII	100.0	56.2	-	-	4	1.6	56.2	
1942	XIII	60.0	56.6	40.0	56.5	5	2.0	56.6	
1941	XIV	100.0	48.0	-	-	1	0.4	48.0	
% in Sample			58.6%		41.4%			Obs. 249	

Table 18 - Age distribution and mean lengths of cod from Hamilton Inlet Bank, trawlers: L (A) 2, 31-X-55, 54°35'N, 54°40'W, and L (A) 3, 1-XI-55, 54°30'N, 54°30'W.

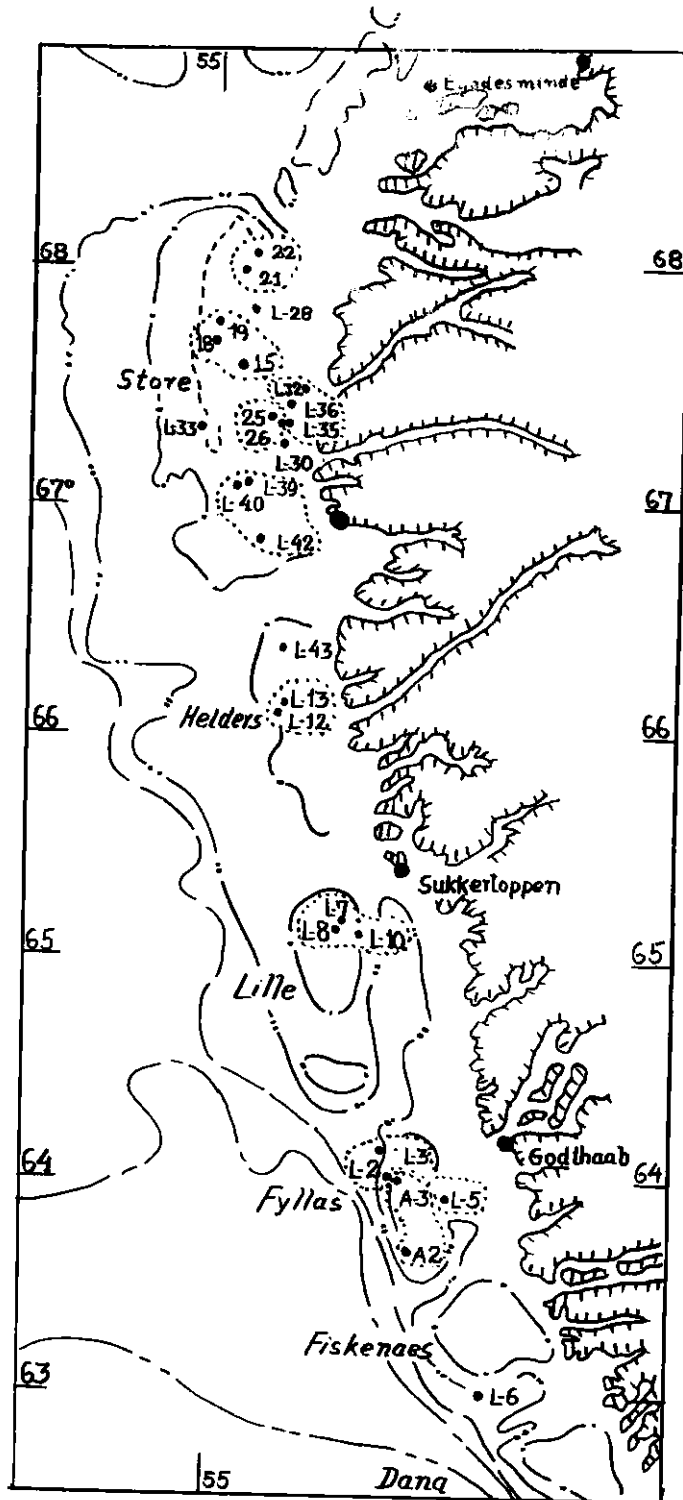


Fig.1 - Map showing the localities of the samples of cod from the Portuguese fishing campaign in Subarea 1 in 1955 (cfr. Table 1).

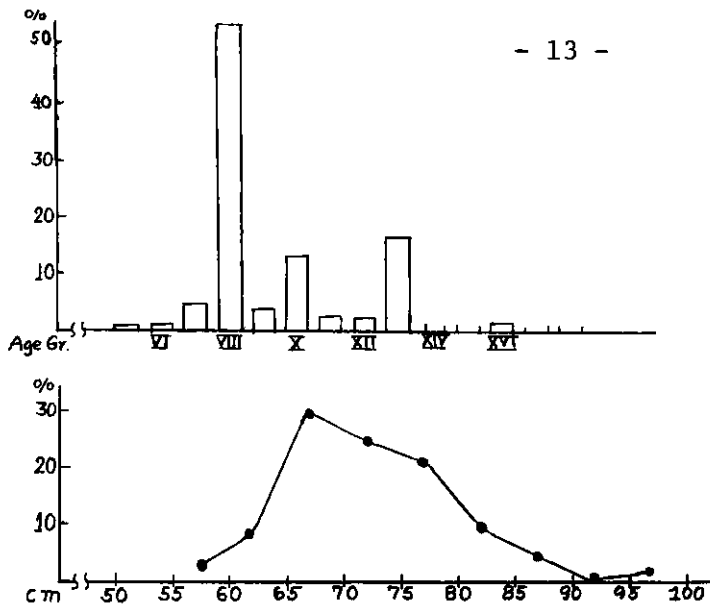


Fig.2 - Age and length distribution of a sample of cod. Fiskenaes 18-6-1955 (cfr. Table 2)

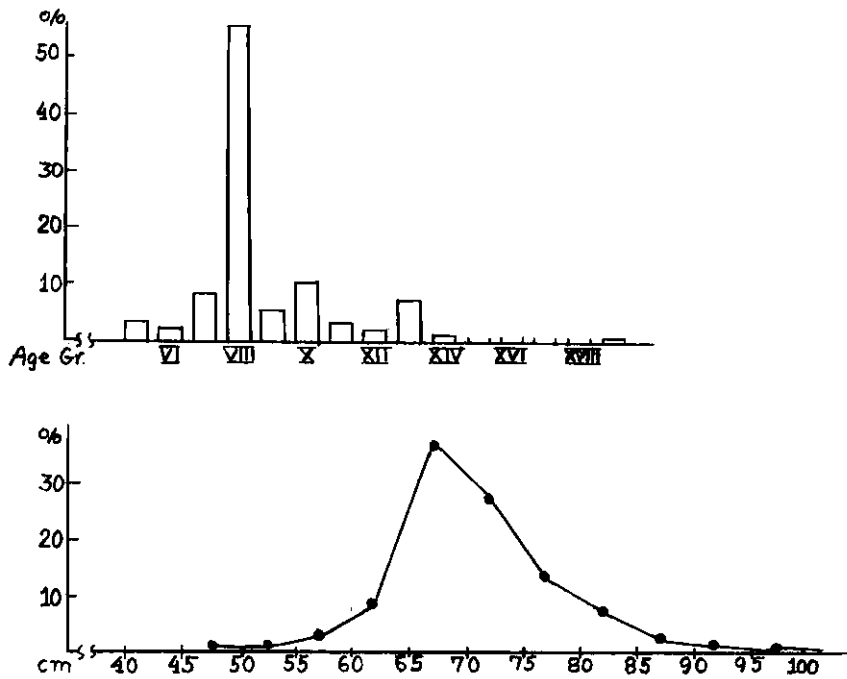


Fig.3 - Age and length distribution of 3 samples of cod from Fylla Bank, 12-17 June 1955 (cfr. Table 3). (Dory Vessels)

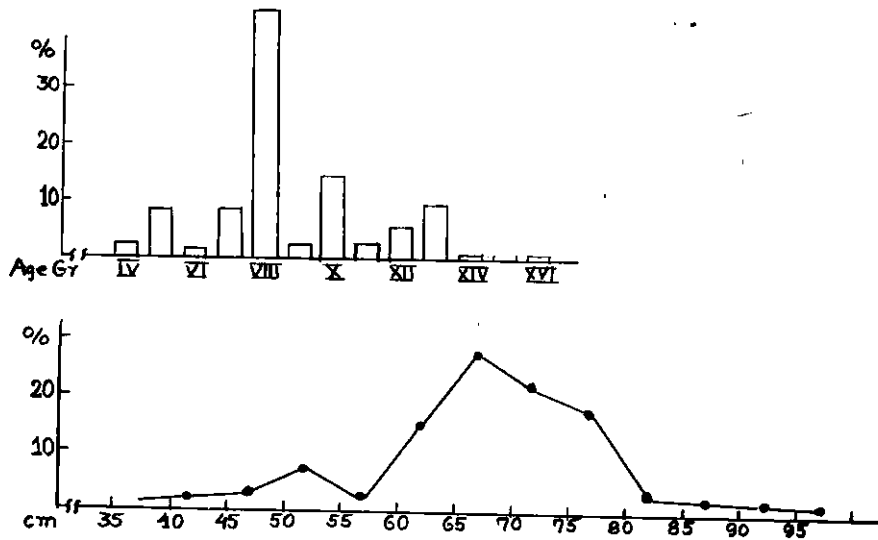


Fig.4 - Age and length distribution of 2 samples of cod from Fylla Bank (trawlers) 30 June-1 July 1955 (cfr. Table 4).

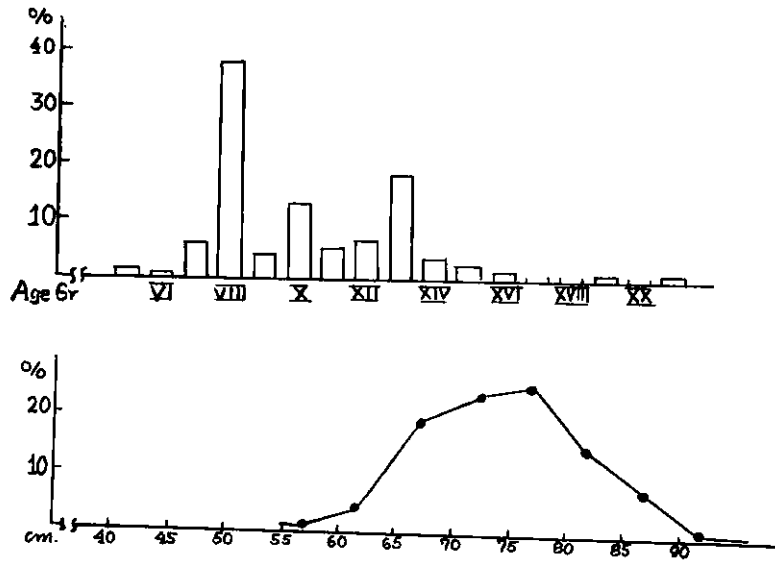


Fig.5 - Age and length distribution of 3 samples of cod from Lille Hellefiske Bank, dory vessels, 22-28 June 1955 (cfr. Table 5).

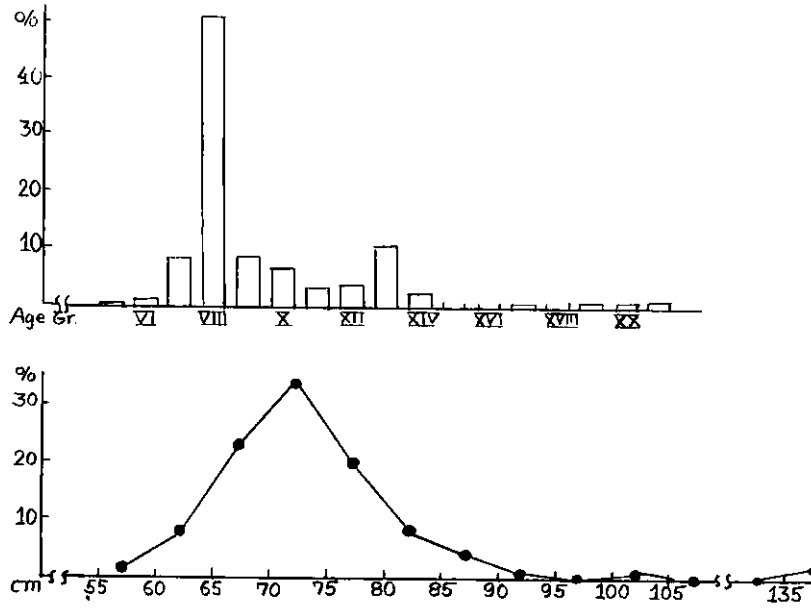


Fig.6 - Age and length distribution of 2 samples of cod from Helders Bank, dory vessels, 30-6 and 2-7-55 (cfr. Table 6)

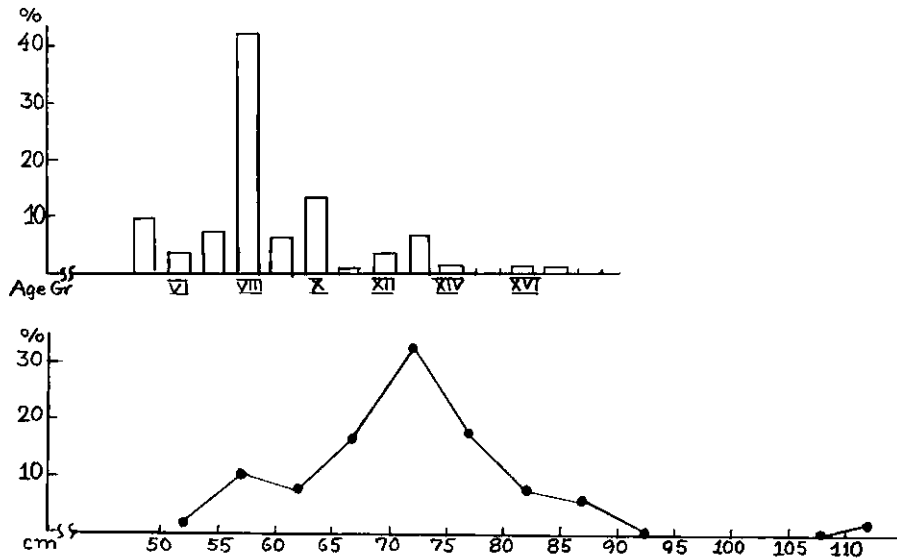


Fig.7 - Age and length distribution of 1 sample of cod from Helders Bank, dory vessel, 13-8-55 (cfr. Table 7).

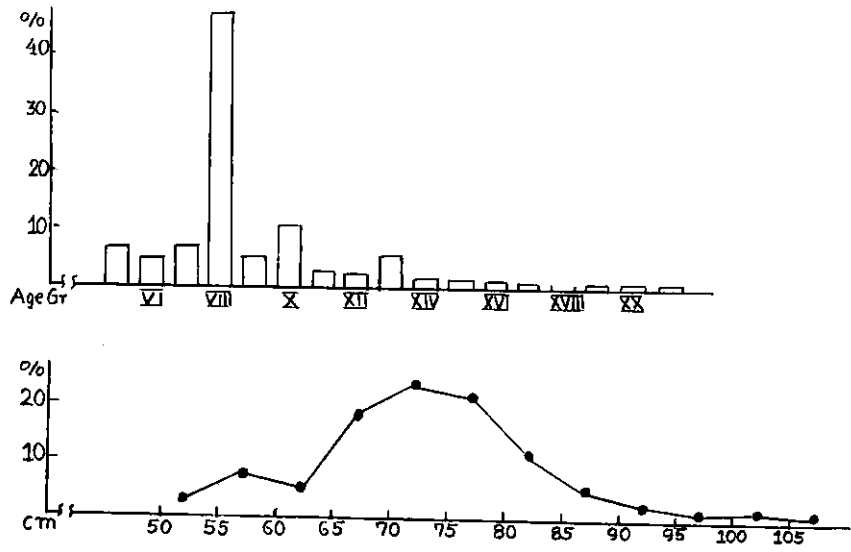


Fig.8 - Age and length distribution of 3 samples of cod from Store Hellefiske Bank, dory vessels, 8-12 Aug. '55 (cfr. Table 8).

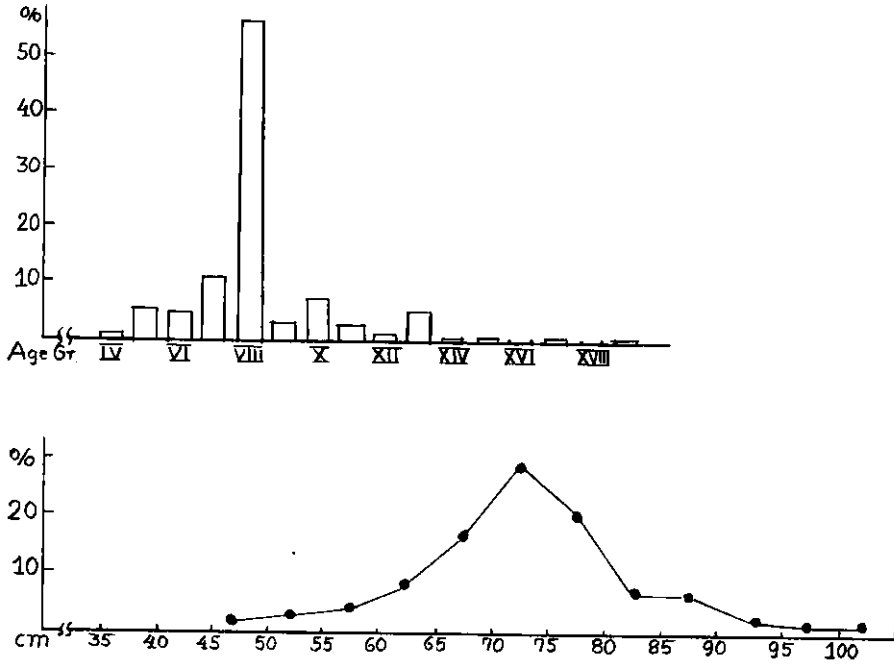


Fig.9 - Age and length distribution of 2 samples of cod from St.Hellefiske Bank, dory vessels, 19-20 July '55 (cfr. Table 9)



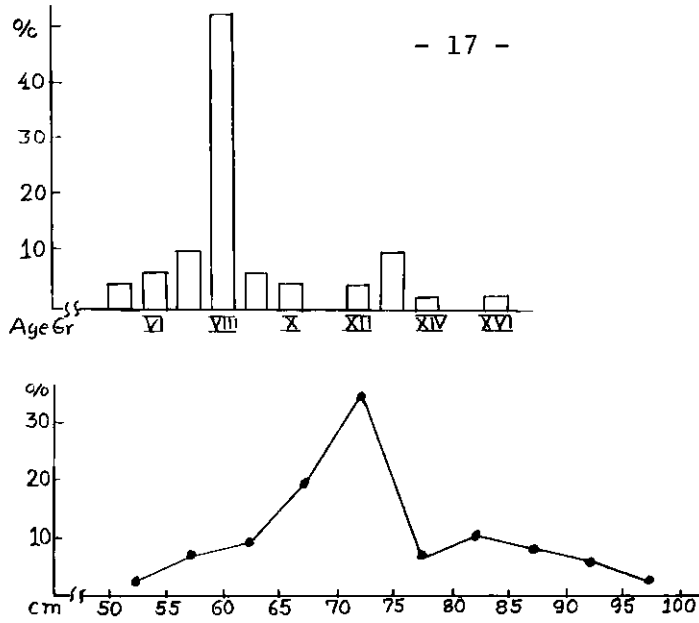


Fig.10 - Age and length distribution of one sample of cod from St.Hellefiske Bank, dory vessel, 25 July '55 (cfr. Table 10)

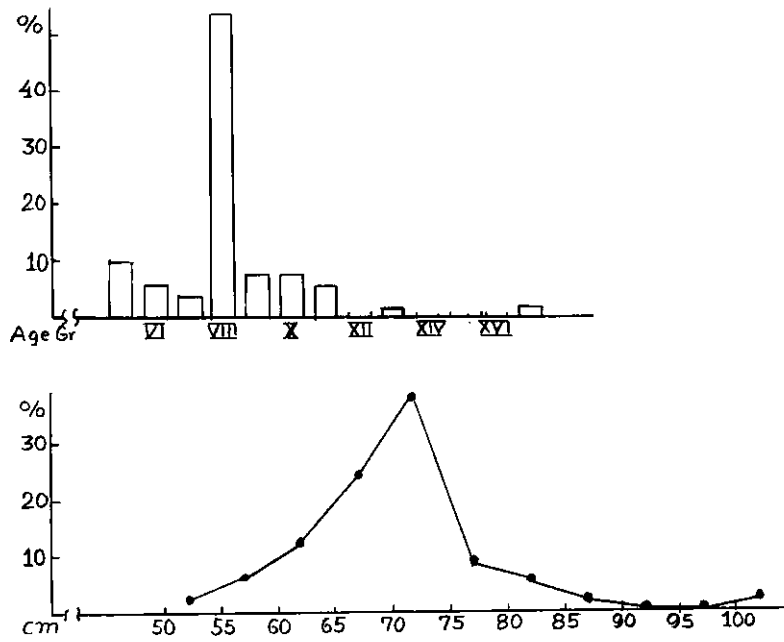


Fig.11 - Age and length distribution of one sample of cod from St.Hellefiske Bank, dory vessel, 29 July '55 (cfr. Table 11).

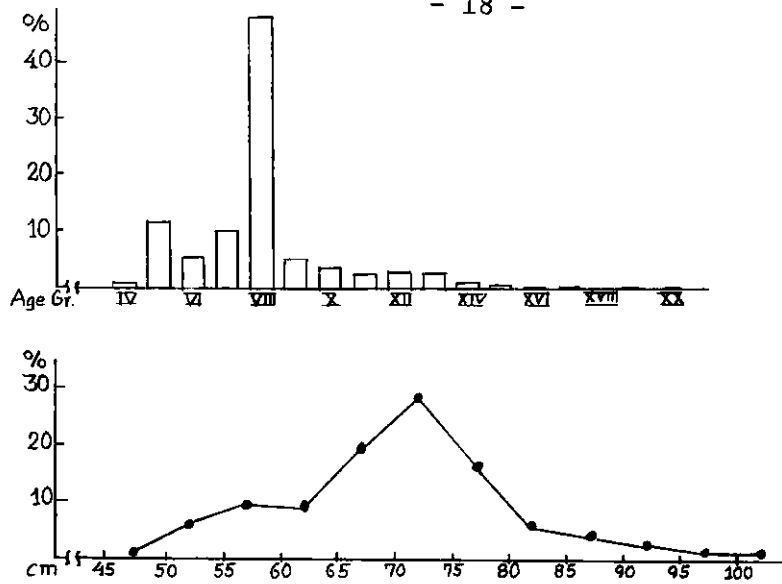


Fig.12 - Age and length distribution of 3 samples of cod from St.Hellefiske Bk., dory vessels, 27 July-3 Aug. 1955 (cfr.Table 12)

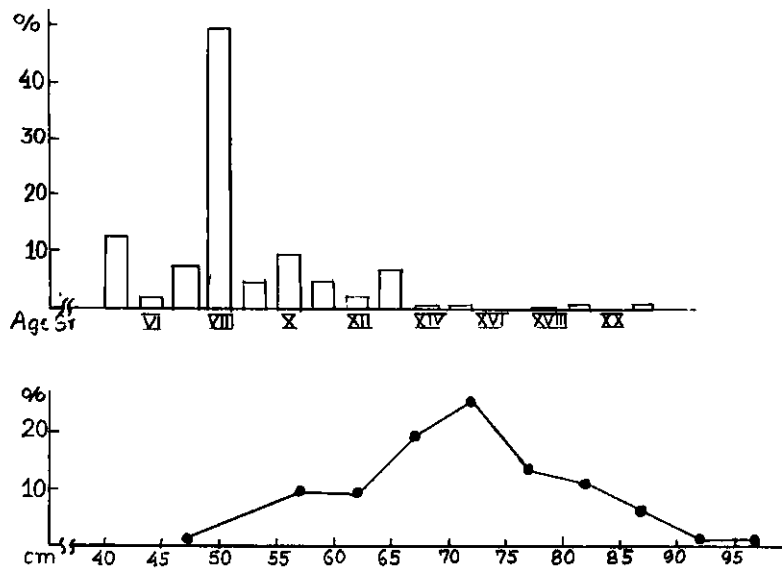


Fig.13 - Age and length distribution of 3 samples of cod from St.Hellefiske Bk., dory vessels, 5-11 July '55 (cfr. Table 13).

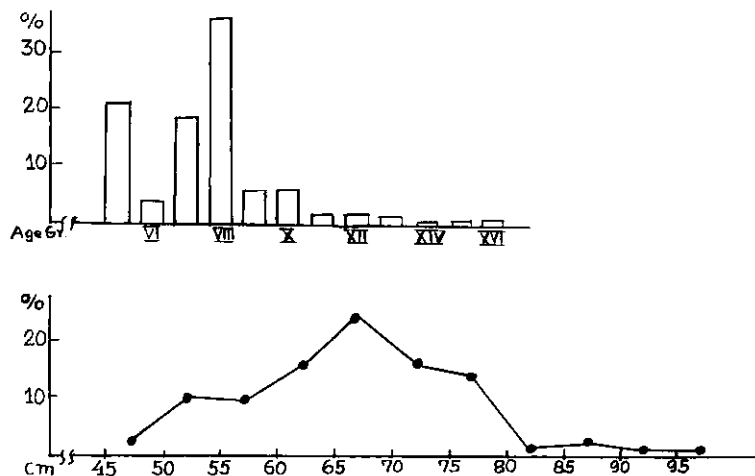


Fig.14 - Age and length distribution of one sample of cod from St.Hellefiske Bk., dory vessel, 23-7-55 (cfr. Table 14)

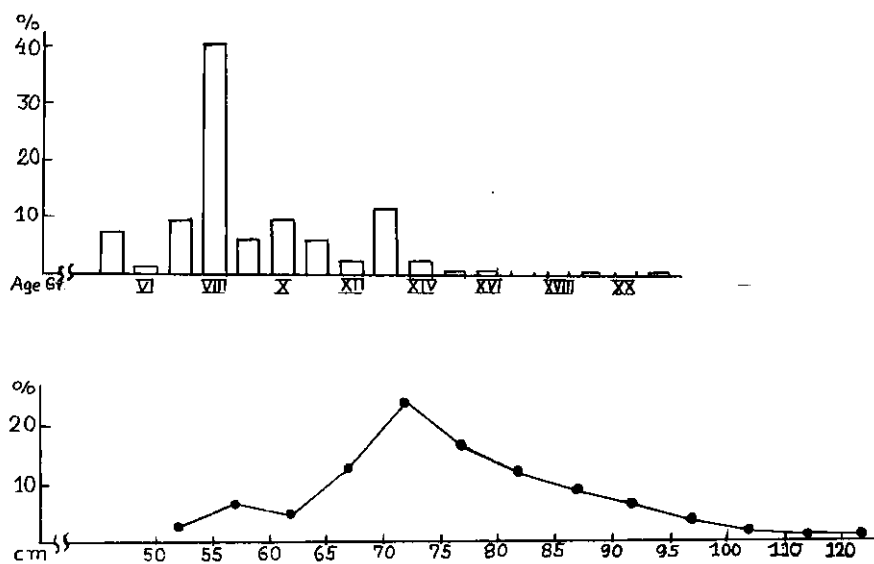


Fig.15 - Age and length distribution of 2 samples of cod from St.Hellefiske Bk., dory vessels, 13-14 July, 1953 (cfr. Table 15).

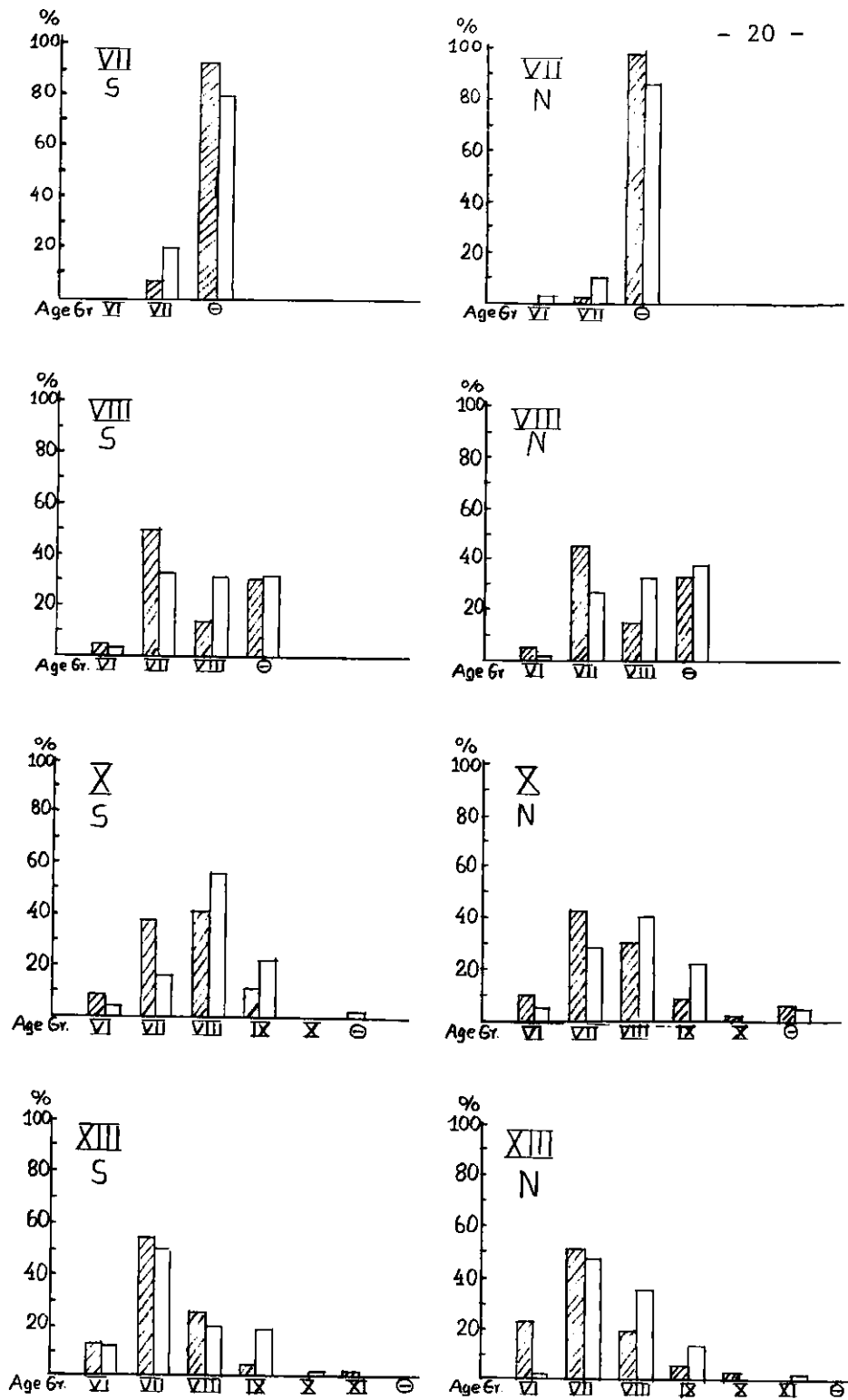


Fig.16 - Percentage distribution of males (striated columns) and females (white columns) within the abundant age-groups (VII, VIII, X and XIII) in samples from the southern (S) and northern (N) part of the Portuguese fishing region in Subarea 1 (cfr. Table 16.)

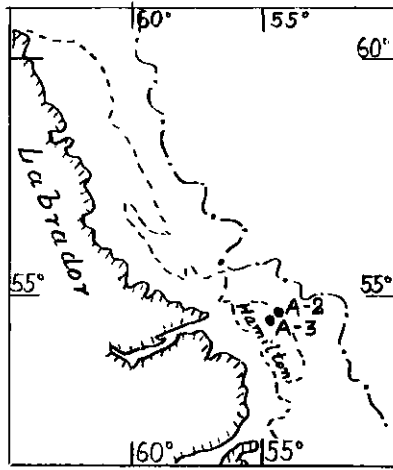


Fig.17 - Location of samples of cod from Portuguese trawlers in the Hamilton Inlet Bk. Area (Subarea 2), October-November 1955.

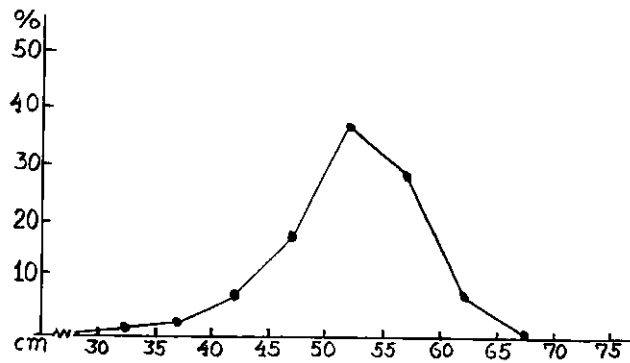
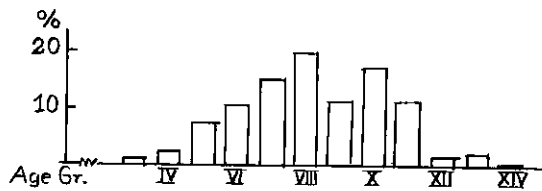


Fig.18 - Age and length distribution of 2 samples of cod caught by a Portuguese trawler in the Hamilton Bank area, 31 Oct.-1 Nov. 1955 [L(A)2-3].

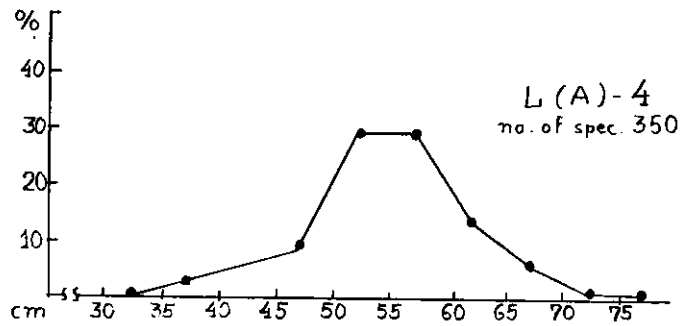
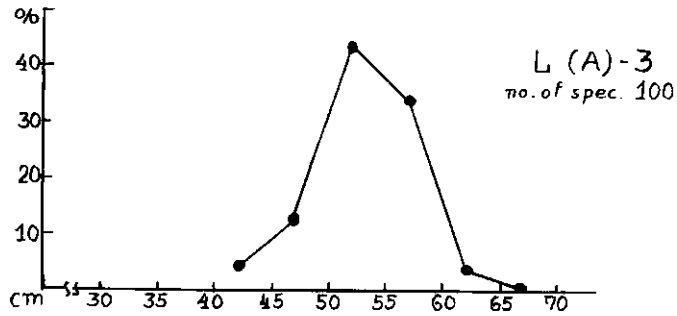
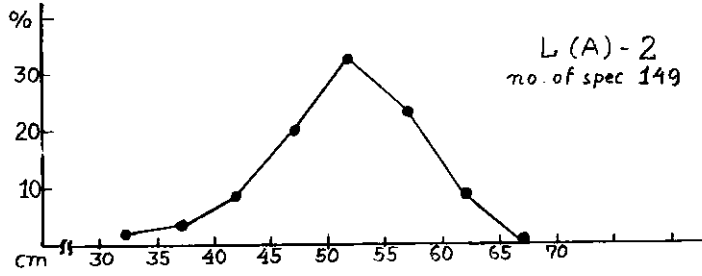
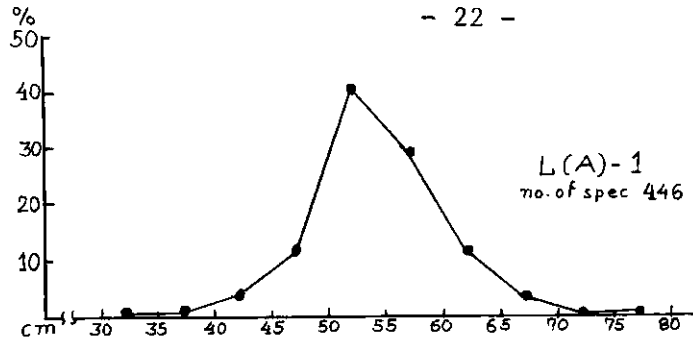


Fig.19 - Length composition (5 cm. groups) of samples of cod from the Hamilton Inlet Bk. area, Portuguese trawlers, Oct.-Nov. 1955.