INTERNATIONAL COMMISSION

FOR THE

NORTHWEST ATLANTIC FISHERIES

SAMPLING YEARBOOK VOLUME 5

for the year 1960

PART 1: COD - HADDOCK - FLOUNDER

Edited by B. F. CALVIN DEBAIE

Tables prepared for printing by Jean S. Maclellan

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1962

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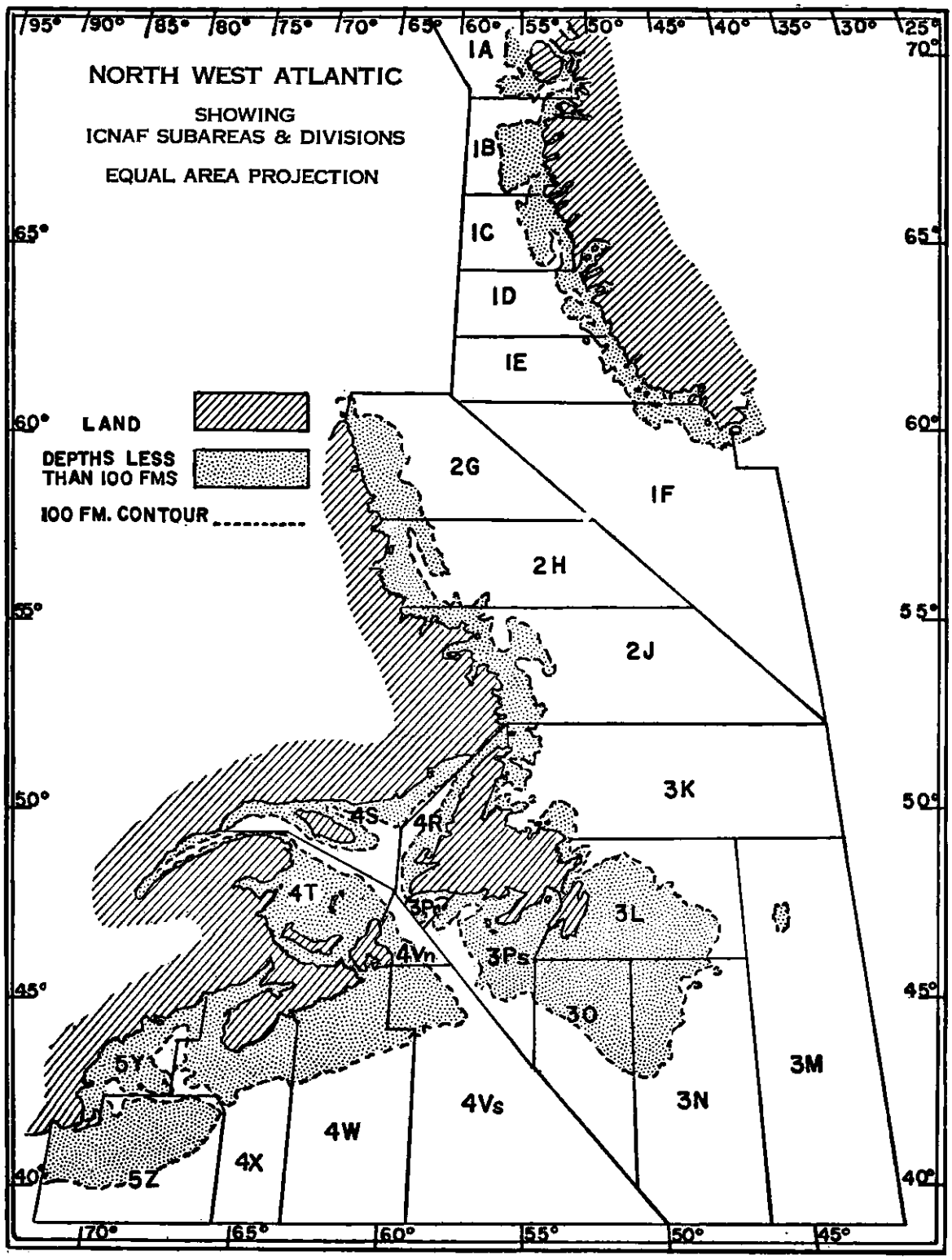

An Equal Area Map of the ICNAF Convention Area.

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INTRODUCTION

by B. F. Calvin DeBaie

This edition of the Sampling Yearbook, which is in two parts, summarises, as in previous years, the data on lengths, ages and weights of the cod, haddock and flounder in Part One, and redfish in Part Two, which have been collected to further the investigations of the fisheries and fish stocks of the Northwest Atlantic. In this volume tables are given of the length frequencies of samples taken in 1960 from commercial landings or catches as well as from catches of research vessels. Several countries have also submitted age frequency data and age/length tables.

Samples are taken either on shore from commercial landings or at sea from the catches of commercial or research vessels. Where the commercial vessel catch is sampled at sea, the samples are taken either before or after the discarding of small, unmarketable fish. In sampling the landings, samples are usually taken from each of the size categories in which the fish are landed, and the overall length frequency estimated by pooling the samples after weighting by the quantity of fish landed in each size category. Since sampling practices vary among countries, some further "Notes on the Sampling Data" are given on pages xi-xv.

It is the intention of the Commission that the data incorporated in the Sampling Yearbook should be readily intercomparable. To this end, the Commission recommended that the fork length recorded to the nearest centimetre be adopted as the standard measure. It further recommended that the length measurements should be reported by 3-centimetre groups for the cod, by 2-centimetre groups for the haddock and by centimetres for the redfish and flounder. Only two methods of measuring fish are now in common use in the Convention Area: the one is the standard measure noted above, which is extensively used in Subareas 2, 3, 4 and 5; the other is the total length measured to the centimetre below, which is used by a few of the countries fishing in Subarea 1. Measuring to the total length gives a greater length than the standard, but this is compensated to some extent when measuring to the centimetre below, which gives a lesser length. Because of the very small differences involved and the limited data available to establish conversion factors, no conversions to standard measure have been made.

As the order in which the tables were published in Volume 4 of the Sampling Yearbook proved temporarily satisfactory, the same sequence is maintained in this volume, but it is in two parts:

1. (a) The 1960 tables in Part One are arranged by species in the order of cod, haddock and flounder, with a separate section for each species.
   (b) Part Two contains the tables for redfish.

2. Blue pages at the beginning of each section are a guide to the tables within that section.

3. Within a species section, length frequencies are given first, followed by age frequencies and age/length frequencies or keys.

Length and age frequencies are generally given in parts per thousand but in some cases (notably the U.S. data for Subarea 5 haddock landings), as the total numbers landed. Age/length keys are given as the actual number of otoliths read, but in some cases the tables are given in frequencies per mille.

Data are frequently reported separately for the sexes and are so published.

For each length or age frequency the following data are reported if available.

Serial Numbers:	The serial numbers (as given by the scientist reporting the data) of the samples on which the frequencies are based.
Number of Samples:	The number of samples on which the frequencies are based.
Number of Fish Measured or Aged:	The total number of fish measured in all the samples on which the frequencies are based.
Mean Length (cm) or Mean Age:	The estimated mean length or age of the catches or landings represented by their frequencies.
Mean Weight (Kg):	Given as round, fresh weight unless otherwise noted.
Total Wt. Landed (Tons):	The total commercial landings reported in the ICNAF Statistical Bulletin for the month/division, gear and country to which the frequencies refer.
Estimated No. (millions):	This figure is calculated by dividing the total weight landed by the mean weight.

Mesh or Hook Size:	The mesh size is given in inches or millimetres and is the internal, stretched diameter of the wet, used mesh unless otherwise stated. Hook sizes are given as the code numbers by which the hooks are sold.
Range of Depths:	Given in fathoms (fm) or metres (m). For landings, the depths are given at which fishing has taken place on the trip from which the samples were taken. For catches sampled at sea, the depths are given of the individual sets from which the samples were taken.

In many cases, sampling from different depth zones, and possibly different stocks, in a division are pooled. The number of decimals in the tables is frequently greater than justified by the data. Similarly, the mean weight of the fish and the estimated number of fish landed, etc., are often given to a larger number of decimals than justified by the data or by the conversion factors used.

Weights are always recorded in metric tons round, fresh (i.e. the nominal catch), except where otherwise noted. The conversion factors used are the same as those used in the ICNAF Statistical Bulletins (see Vol. 9, 1959, page 11). The most commonly used are:

1.2 for cod and haddock, gutted, head on
3.0 for cod and haddock, green salted, landed in Europe
2.7 for cod and haddock, green salted, landed in North America or Greenland

In addition to the regular sampling of the commercial and research vessel catches and landings, a number of special data have been reported and are included here: a series of samples reported by Canada to measure the quantity and sizes of cod discarded at sea (page 11, Part 1), and a table giving the weights of whole fish, the liver, the gonads, and the intestines (Portugal, page 195, Part 1).

NOTES ON THE SAMPLING DATA

Canada (Maritimes and Quebec)

Reported by W.R.Martin
A.C.Kohler
D.N.Fitzgerald
A. Marcotte
J.M.Boulanger

Commercial landings of groundfish in the provinces of Nova Scotia, New Brunswick and Prince Edward Island have been continuously sampled for size and age composition since 1945. Sampling emphasis has been placed on landings by offshore vessels at the largest groundfish ports, but has also included sampling from the inshore fleets. Length frequencies from routine sampling of the commercial catches and landings and from sampling to measure discarding are reported to the Commission. Age frequency data are not reported.

Landings are normally culled by market categories. Cod are divided into Large (Steak) and Medium (Market) sizes at about 10 pounds fresh, gutted weight. Small (Scrod) cod and haddock are mainly less than 2-1/2 pounds gutted weight. Small round haddock are sometimes landed in a separate market category. These market categories are sampled approximately in proportion to the relative numbers of each in a trip landing. When the final weighout is available, the length frequency of the landings is determined by applying weighting factors to each category. The length frequencies of the sexes are not usually given separately.

Fork length measurements are recorded to the nearest centimetre for each fish. These measurements are reported by 3-centimetre groups for cod, 2-centimetre groups for haddock and by centimetres for flounder. Mesh size is recorded as the approximate inside, stretched, wet used, measurement of an average cod-end mesh. Hook size is given by number, No. 6/0 being the smallest commercial groundfish hook, and No. 14 being the large hook used on longlines by Quebec.

Canada (Newfoundland)

Reported by A.M.Fleming
A.W.May
W.N.Batton
M. O'Hanlon

Length frequencies based on sampling of the commercial landings of cod, haddock, redfish and American plaice in 1960 are reported. A few samples are given for 1959 for cod traps and jigger. The length frequencies of redfish and American plaice are given by sexes.

Length measurements are made of the fork length and recorded to the nearest centimetre. Sampling is carried out on shore, from both the offshore and inshore fleets. The total weight of each sample is obtained, together with the total weight of the species landed from the trip sampled. By means of the weighting factor determined from these data, each sample frequency is raised to give the estimated numbers of each size in the landings sampled. These raised frequencies are then pooled to give length frequencies by month, type of gear and division, and then compiled in 3-centimetre groups.

The 4-inch mesh size recorded for traps is to be considered a minimum.

Although a range of sizes for the meshes in otter trawl is shown, it can be assumed that these represent the 4-inch mesh or equivalent as recommended by ICNAF. Some changes in hook sizes are to be noted. There has been some difficulty in obtaining actual sizes which can be recognized internationally, since many fishermen order by manufacture number. For example, the handline hooks are Mustad hooks of about 1-1/4 inches in diameter across the hook from the point to the shank and from 3-1/2 to 4-inches long. These are large hooks, much larger than the No. 15 Mustad, and are numbered 3020 and 3021. These are approximately equal to a No. 11 hook. The jigger size is listed as No. 5, is paired and is the largest hook used.

Denmark (Faroes)

Faroese investigations of commercial cod catches were undertaken and reported to the Secretariat for the first time in 1959. No material was available for publication for the year 1960.

Denmark (Greenland) Reported by Paul M. Hansen

Samples of cod have been taken from the inshore catches of commercial and research vessels and from the offshore catches of research vessels. The samples are not pooled. Length measurements are made of the total length (end of tail lobes) and recorded to the centimetre below. Age frequencies, mean size at each age and age/length keys are also reported.

Germany Reported by Arno Meyer

Age and length frequencies and age/length keys for the 1960 commercial landings of cod by otter trawlers are reported for the Convention Area, as well as for the Banks off East Greenland.

Length measurements are made of the total length (end of tail lobes) and recorded to the centimetre below. The length frequencies are reported to the Commission in standard 3-centimetre groups.

Where sampling of cod is carried out on shore at the market, each of the three size categories landed is sampled separately, and the final length frequency calculated by weighting each length frequency by the quantity landed in the size category and then pooling the frequencies. The cod from the commercial landings are gutted before being measured. Redfish are measured in the whole round state, except for a few large ones. Otoliths are taken according to length of fish.

Iceland — Reported by Jakob Magnusson

Individual length frequencies of redfish samples taken on two survey cruises in 1960 were reported to the Commission. A summary of these by month/division is published here. Length measurements are taken from total length to nearest centimetre. (Board is offset 0.5 cm to permit reading to nearest cm).

Norway

Length frequencies, age frequencies with mean size at each age and age/length keys are reported for cod. The samples are taken from catches made by research vessels in Divisions 1C, 1D and 1E.

Lengths are reported by the standard 3-centimetre grouping and the age frequencies and age/length keys are given by sexes.

Measurements are made of the fork length to the nearest centimetre.

Some samples for commercial bottom long-line catches are included.

Portugal — Reported by Mario J. Ruivo and Glicinia V. Quartin

Sampling at sea of the cod catches (before discarding undersized fish) of the Portuguese otter trawlers and dory vessels has been carried out in 1960 in Subareas 1, 2, 3 and 4. Length frequencies, age frequencies (based on otoliths) with mean size at each age and age/length frequencies by sexes are included in the data reported.

Length measurements are made of the fork length recorded to the nearest centimetre. Samples are not weighted by the quantity caught; when taken on the same fishing bank at the same time, they are generally pooled.

Spain — Reported by O. Rodriguez M.

Length frequencies of the cod catches of the Spanish otter trawlers "Aliseo" and "Vendaval" collected at sea for the year 1960 are reported. Samples are taken from the commercial catch before discarding.

asurements are made of the fork length recorded to the nearest
gth frequencies are reported in the standard 3-centimetre groups
F. Samples are not weighted according to the quantity caught, but
onth/divisions.

Reported by Ju. Ju. Marty
V.I.Travin
E.I.Surkova
E.M.Mankevich

Socialist Republics

length and age frequencies of cod and redfish catches are reported.
re taken at sea, before discarding, from the catches of exploratory and
al otter trawlers. The data submitted has increased by ten-fold over
e previous year.

Reported by C.E.Lucas
G.C.Trout
R.J.H.Beverton

Kingdom

The length composition of the cod landings of the United Kingdom otter trawl-
from Subarea 3 is reported. Measurements are made of the total length to the
imetre below. Samples are taken of each of the size categories into which the
dings are divided; the length frequencies so obtained are then pooled, after
ighting by the quantity of fish in the category from which they are taken. This was
ken from "Cod Sampling on board a Factory Stern Trawler by G.C.Trout, Fisher-
es Research Laboratory, Lowestoft, which was converted from 5 cm to 3 cm group-
ng by the Secretariat. Data on length frequencies of numbers per 100 hours fishing
was taken from U.K. Research Report for 1960.

United States

The length frequencies of the United States landings of cod, haddock and red-
fish for 1960, and the age/length frequencies of the landings of haddock for 1960/61
are included in this volume. All measurements are made of the fork length to the
nearest centimetre.

Reported by H.E.Murray

Compilation of Data

(a) Cod: Subarea 5, Otter Trawlers

Each length frequency sample is weighted by the weighout of the landing from
which it was obtained (by market category for large, market, scrod; by total cod for
mixed). The resulting length frequencies are totalled and weighted by total United
States cod landings for otter trawlers by month. These numbers are in turn combined

into length frequencies for total United States otter trawl cod landings for each month. The percentage of fish for each centimetre interval is then computed, combined into 3-centimetre groups, and finally converted to parts per thousand.

(b) Haddock

Reported by J.A.McCann
F.A.Dreyer
A.C.Kohler
D.N.Fitzgerald

The length frequency samples for each month by market category are pooled and the resulting frequency weighted by the total quantity of each category landed from each unit area. The weighted numbers of fish of each category are then pooled to obtain the total length frequency for haddock for each month for each division. Ages are determined from the scales, and age/length frequencies are compiled.

Length frequencies are reported by centimetres and age/length frequencies by 3-centimetre groups.

Length frequencies of haddock by quarters are reported under the United States/Canada Co-operative Programme.

Haddock biostatistical records are reported by the "haddock year": namely, February 1st to January 31st of the following year. The haddock's birthday is taken as February 1st.

(c) Redfish

Reported by G.F.Kelly
A.M.Barker
G.M.Clarke
P.H.Chase

Samples are taken from the commercial catches of otter trawlers and are pooled without weighting.

COD

Guide to Tables

The numbers in the guide are page numbers. For a length frequency reference the page number alone is given. For an age frequency the page number is followed by A. For an age frequency with mean size at each age, the page number is followed by A'. For an age/length key or frequency the page number is followed by K. For a weight table the page number is followed by W. For discard experiments the page number is followed by D.

PAGE NUMBERS

	OTTER TRAWL				OTHER GEARS			
Division	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
1959								
[illegible]							6	
[illegible]							6	
[illegible]							5,6	
[illegible]								
[illegible]	25,71A', 144K,145K 146K,147K	25,26, 71A',72A' 74A',148K 149K,159K 160K,161K	25,72A' 150K,151K	25,72A' 152K,153K				
[illegible]							23,65A' 128K,129K	
[illegible]		34	34				19,23,48A' 66A',67A' 95K,96K 130K,131K 132K	23,67A' [illegible]
[illegible]		24,26,28 34,36 70A',73A' 75A',85A' 86A',138K 154K,176K 177K,178K		24,139K		28,76A'	19,49A' 50A',51A' 97K,98K 99K,100K 101K,102K	
[illegible]		162K	24,70A' 140K			163K,164K		
[illegible]		24,26,27 28,29,36 70A',73A' 75A',78A' 86A',87A' 149K,153K 156K,164K 177K,180K	24,34 70A',142K		20,21 52A',57A' 58A',109K 112K,113K 114K	20,21,22 28,53A' 58A',59A' 60A',61A' 76A',105K 111K,116K 117K,118K 121K	20,21,22,23 50A',53A' 54A',55A' 56A',60A' 61A',62A' 67A',68A' 103K,104K 107K,108K 109K,110K 111K,112K 122K,123K 124K,125K	

(Cont'd.)

PAGE NUMBERS

	OTHER TRAIL				OTHER GRAPS			
Division	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
1B		24,26,29 34,36 71A',73A' 78A',87A' 143K,157K 166K,181K				23,28,66A' 77A',135K	69A'	23,69A' 136K
1D		26,29,36 74A',79A' 88A',158K 167K,182K					22,23,64A 126K,127K 137K	22,64A' 127K
Subtotal 1	43	43	43	43				
2E							16	
2H			30,34 79A' 168K	34			18	
2K	37	30,37 80A',88A' 89A',169K 170K,183K 184K	31,34 81A',171K 172K	31,34,37 82A',89A' 90A',173K 174K,185K 186K			17	
Subtotal		195K	195K	195K		195K	195K	195K
3A	38 90A',187K	32,35,38 91A',188K	38	38				
3B	39,44	14,32,35 39	14,39	32,35,39		14,15,16	14,15,16	
3D	39 91A',189K	39	39 92A',190K	39				
3E	40	40	40 92A',93A' 191K,192K	40				
3G	41	35,41 7	41	41				
3H	32,35							
3J	14					14,16	14,15,16	
3K	41,45 93A',94A' 193K,194K		41					
3L	32,33,35	33,35	8					
3M			7			13	12,13	
3N			11D					
3P		7,11D,13	7,11D,13	13		10	9,10,12	
3Q	33,35 83A'	33,35 84A'						
3R		8				9	9	
3S		8						
3T	8,35	8		8				
3U						9,10		
3V	46	46	46	46				
3W		47	47	47				

TABLE 1 CANADA (Newfoundland) - 1959 LENGTH FREQUENCIES - COD

by A.W.May
W.N.Batten

Commercial Catches

Gear	Trap	
Division	2J	
Month	July	August
3-cm Group	FREQUENCIES in °/oo	
33-35	1	-
36-38	4	-
39-41	10	28
42-44	40	20
45-47	52	52
48-50	62	76
51-53	105	112
54-56	159	199
57-59	180	199
60-62	160	139
63-65	118	104
66-68	59	24
69-71	29	28
72-74	12	12
75-77	6	-
78-80	2	8
81-83	2	-
84-86	2	-
Total °/oo	1003	1001
Serial Numbers		
Number of Samples	3	2
Number Fish Measured	1310	251
Mean Length (cm)	57.304	56.566
Mean Weight (Kg)	1.796	1.810
Total Wt. Landed (Tons)		
Estimated No. Landed		
Mesh Size (inches)[1]	4c	4c
Range of Depths (fm)	10-14	8-9

1) c = cotton

TABLE 2 · CANADA (Newfoundland) - 1959 LENGTH FREQUENCIES - COD by A.W.May

Research Catches

Gear	Jigger			
Division	2G	2H		2J
Month	August	August	July	August
3-cm group	FREQUENCIES in /oo			
33-35	-	2	-	8
36-38	-	22	-	8
39-41	-	42	-	17
42-44	8	58	-	58
45-47	83	87	-	50
48-50	167	147	17	67
51-53	217	170	58	200
54-56	208	205	92	200
57-59	200	143	183	167
60-62	83	67	233	75
63-65	25	42	208	50
66-68	8	8	100	42
69-71	-	2	75	17
72-74	-	7	33	17
75-77	-	-	-	-
78-80	-	-	-	8
81-83	-	-	-	-
84-86	-	-	-	-
87-89	-	-	-	-
90-92	-	-	-	-
93-95	-	-	-	-
96-98	-	-	-	-
99-101	-	-	-	8
102-104	-	-	-	-
105-107	-	-	-	-
108-110	-	-	-	-
111-113	-	-	-	8
Total /oo	999	1002	999	1000
Serial Numbers				
Number of Samples	1	5	1	1
Number Fish Measured	120	600	120	120
Mean Length (cm)	53.926	52.531	61.474	55.774
Mean Weight (Kg)	1.701	1.433	2.172	1.819
Total Wt Landed (Tons)				
Estimated No. Landed				
Hook Size	#5	#5	#5	#5
Range of Depths (fm)	7	4-28	40	18-22

TABLE 3 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - COD by W.R.Martin D.N.Fitzgerald

Commercial Landings

Vessel Type	Otter Trawlers							
Vessel Tonnage Class	35-55				51-150			151-500
Division	4T				4S			30-3P
Month	June	July	August	September	July	August	September	June
3-cm group	FREQUENCIES in °/oo							
36-38	1	-	-	-	-	-	-	-
39-41	18	19	11	11	1	4	4	-
42-44	82	60	80	76	24	38	54	4
45-47	107	108	123	107	96	113	116	72
48-50	120	148	114	172	180	191	166	250
51-53	126	153	121	182	190	174	146	251
54-56	131	122	123	147	157	140	138	188
57-59	105	124	132	105	119	116	132	92
60-62	95	102	88	67	89	83	97	62
63-65	65	54	66	57	56	50	72	19
66-68	48	46	49	28	33	38	29	4
69-71	27	23	20	14	22	25	21	8
72-74	24	17	24	10	16	8	11	4
75-77	15	9	13	6	8	5	5	1
78-80	6	4	8	6	5	3	4	-
81-83	8	2	9	2	2	3	2	1
84-86	5	1	5	2	-	3	-	1
87-89	4	3	4	1	1	2	1	1
90-92	3	1	1	2	-	1	-	3
93-95	2	1	3	2	-	1	-	4
96-98	3	1	3	1	1	1	1	5
99-101	2	1	-	1	-	1	-	6
102-104	1	-	1	-	-	-	-	5
105-107	1	-	1	-	-	-	1	7
108-110	1	1	-	-	-	-	-	7
111-113	-	-	-	1	-	-	-	1
114-116	-	-	-	-	-	-	-	2
117-119	-	-	1	-	-	-	-	1
120-122	-	-	-	-	-	-	-	1
Total °/oo	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers								
Number of Samples	4	3	2	2	2	3	1	1
Number Fish Measured	1415	1386	1340	820	1067	1810	369	300
Mean Length (cm)	56.10	54.94	55.98	54.12	54.98	54.58	54.66	55.27
Mean Weight (Kg)	1.70	1.57	1.64	1.55	1.56	1.53	1.52	1.98
Total Wt.Landed (Tons)								
Estimated No. Landed								
Mesh Size (inches)1)	4½n	4⅜-4½n	4⅜n	4⅜p	4⅜n	4⅜n	4½n	4½m
Range of Depths (fm)	10-70	15-75	4-55	30-50	8-30	6-80	30-50	40-54

1) n = nylon; p = perlon; m = manila

(cont'd.)

TABLE 3 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - COD by W.R.Martin
(cont'd.) D.N.Fitzgerald

Commercial Landings

Vessel Type	Otter Trawlers							
Vessel Tonnage Class	151-500							
Division	4R	4V		4V-W	4W			
Month	August	April	May	June	March	April	May	November
3-cm group	FREQUENCIES in °/oo							
39-41	-	-	7	11	-	7	4	7
42-44	-	31	-	71	-	26	61	30
45-47	-	63	28	168	12	74	46	108
48-50	8	123	157	141	38	117	54	159
51-53	69	140	180	136	64	156	89	115
54-56	116	192	187	86	99	146	98	90
57-59	165	183	133	91	119	137	205	85
60-62	175	112	56	98	141	127	106	80
63-65	131	58	75	61	149	74	95	80
66-68	117	34	44	50	154	44	59	73
69-71	94	41	47	13	55	31	67	50
72-74	54	17	13	34	51	17	43	32
75-77	27	-	13	17	38	11	32	44
78-80	10	-	31	20	14	6	22	19
81-83	15	-	8	3	2	6	2	11
84-86	5	2	3	Incomplete - No Large Cod Measured	6	4	3	4
87-89	-	-	5		3	3	2	2
90-92	5	1	3		7	4	3	5
93-95	2	1	2		7	3	3	-
96-98	-	-	4		13	2	2	3
99-101	-	1	2		3	1	1	3
102-104	3	1	2		10	1	1	-
105-107	2	-	-		3	-	2	-
108-110	-	-	-		7	1	-	-
111-113	2	-	-		-	-	-	-
114-116	-	-	-		-	1	-	-
117-119	-	-	-		4	-	-	-
120-122	-	-	-		-	-	-	-
123-125	-	-	-		1	-	-	-
126-128	-	-	-		-	-	-	-
129-131	-	-	-		-	1	-	-
Total °/oo	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers								
Number of Samples	1	1	1	1	1	3	1	2
Number Fish Measured	300	300	300	250	300	1200	300	565
Mean Length (cm)	63.24	56.21	58.05	54.97	62.77	57.22	59.75	58.22
Mean Weight (Kg)	2.18	1.55	1.82	1.79	2.71	1.78	2.43	2.26
Total Wt.Landed (Tons)								
Estimated No. Landed								
Mesh Size (inches)[1]	5m	4½t	4½t	4⅝n	4½m	4½n	4½t	4⅝n
Range of Depths (fm)	32-40	...	...	18-33	...	...	...	30-40

[1] m = manila; t = terylene; n = nylon

(cont'd.)

TABLE 3 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - COD by W.R.Martin
(cont'd.) D.N.Fitzgerald

Commercial Landings

Vessel Type	Longliners					
Vessel Tonnage Class	0-25				26-50	
Division	4V			4X	4T	4X
Month	May	July	November	June	July	April
3-cm group	FREQUENCIES in °/oo					
36-38	-	15	12	-	-	-
39-41	9	15	78	-	9	-
42-44	15	45	48	-	12	7
45-47	24	82	89	-	42	7
48-50	48	89	129	13	33	47
51-53	70	108	76	17	65	32
54-56	133	164	140	87	71	72
57-59	93	141	114	83	57	97
60-62	153	80	126	63	77	68
63-65	119	60	61	123	92	72
66-68	75	77	50	87	113	90
69-71	72	49	26	84	116	68
72-74	51	49	12	23	92	47
75-77	41	17	12	37	57	54
78-80	27	-	15	30	48	25
81-83	7	9	-	33	21	18
84-86	18		6	30	27	43
87-89	17		-	34	12	23
90-92	-		3	37	21	56
93-95	6		-	67	6	39
96-98	6		3	30	9	28
99-101	8		-	10	6	34
102-104	8		-	20	-	23
105-107	-		-	7	6	17
108-110	-		-	17	3	11
111-113	-		-	3	-	17
114-116	-		-	30	-	-
117-119	-		-	3	-	-
120-122	-		-	3	3	-
123-125	-		-	3	-	-
126-128	-		-	10	-	-
129-131	-		-	3	2	5
> 131	-		-	13	-	-
Total °/oo	1000	1000	1000	1000	1000	1000
Serial Numbers						
Number of Samples	1	1	1	1	1	1
Number Fish Measured	300	300	300	300	336	250
Mean Length (cm)	63.15	56.98	55.05	76.35	66.76	73.17
Mean Weight (Kg)	2.04	1.93	1.75	6.07	...	4.24
Total Wt.Landed(Tons)						
Estimated No. Landed						
Hook Size	#6/0	#6/0	#6/0	#14	#15	#6/0
Range of Depths (fm)	30-50	18-28	28-40	85	20-30	...

Incomplete - No Large Cod Measured

(cont'd.)

TABLE 3 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - COD by W.R.Martin
(cont'd.) D.N.Fitzgerald

Commercial Landings

Vessel Type	Handliners				Gill Nets
Vessel Tonnage Class	0-25				26-50
Division	4T			4X	4T
Month	June	July	August	June	August
3-cm group	FREQUENCIES in ‰				
36-38	9	-	-	26	-
39-41	40	42	7	47	-
42-44	48	85	23	16	4
45-47	57	142	37	26	56
48-50	58	150	37	37	56
51-53	88	112	40	74	75
54-56	108	146	97	111	127
57-59	114	108	100	84	111
60-62	124	54	90	95	151
63-65	111	73	87	126	127
66-68	75	42	84	63	71
69-71	65	15	90	79	63
72-74	35	12	90	37	16
75-77	24	12	47	42	12
78-80	16	4	43	47	28
81-83	12	3	33	21	12
84-86	4	-	23	32	8
87-89	1	-	13	11	8
90-92	3	-	33	11	4
93-95	5	-	10	-	8
96-98	1	-	-	10	8
99-101	1	-	13	-	-
102-104	-	-	3	5	-
105-107	-	-	-	-	-
108-110	1	-	-	-	-
Total ‰	1000	1000	1000	1000	1000
Serial Numbers					
Number of Samples	3	1	1	1	1
Number Fish Measured	1137	260	300	190	252
Mean Length (cm)	58.99	53.52	65.95	62.47	62.00
Mean Weight (Kg)	2.11	1.46	...	2.68	2.37
Total Wt.Landed (Tons)					
Estimated No. Landed					
Mesh or Hook Size (ins)	...	...	...	#13	5
Range of Depths (fm)	15-20	15-20	15-20	...	10-15

TABLE 4 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - COD

by W.R.Martin
D.N.Fitzgerald

Paired Sea and Shore Samples taken to determine sizes and quantities discarded at sea

OTTER TRAWLERS - Commercial Samples

Vessel Tonnage Class	26-50						51-150			
Division	4T						4S-T			
Month	June		July		August		July		August	
	Sea	Shore	Sea	Shore	Sea	Shore	Sea	Shore	Sea	Shore
3-cm group	FREQUENCIES in °/oo									
21-23	-	-	-	-	-	-	-	-	1	-
24-26	-	-	2	-	-	-	-	-	1	-
27-29	1	-	5	-	1	-	1	-	1	-
30-32	4	-	7	-	2	-	2	-	3	-
33-35	10	-	10	-	5	-	5	-	4	-
36-38	23	-	17	-	14	-	13	-	12	-
39-41	45	16	41	6	44	17	27	7	24	-
42-44	65	67	81	30	138	132	50	36	70	8
45-47	106	138	99	95	180	191	105	109	152	128
48-50	142	220	108	157	155	165	161	170	183	240
51-53	155	161	136	155	121	128	155	165	167	179
54-56	137	145	117	161	104	112	116	123	128	151
57-59	97	84	127	118	86	93	88	93	97	113
60-62	73	63	76	111	47	50	90	96	61	91
63-65	45	30	53	55	38	40	84	89	38	44
66-68	34	25	36	48	25	27	44	47	29	28
69-71	18	17	28	18	13	14	32	34	12	8
72-74	14	8	18	20	13	14	22	23	4	4
75-77	8	7	10	10	5	6	2	3	5	2
78-80	8	5	8	4	5	6	2	3	1	2
81-83	4	4	4	2	1	1	-	-	1	-
84-86	2	3	4	2	1	2	1	2	2	2
87-89	4	-	2	4	-	-	-	-	1	-
90-92	-	1	2	2	-	-	-	-	-	-
93-95	1	-	2	-	1	1	-	-	-	-
96-98	1	2	1	-	1	1	-	-	1	-
99-101	2	-	1	2	-	-	-	-	1	-
102-104	-	1	1	-	-	-	-	-	1	-
105-107	-	1	1	-	-	-	-	-	-	-
108-110	1	2	1	-	-	-	-	-	-	-
111-113	-	-	1	-	-	-	-	-	-	-
114-116	-	-	1	-	-	-	-	-	-	-
Total °/oo	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers										
Number of Samples	1	1	1	1	1	1	1	1	1	1
Number Fish Measured	3497	710	1635	566	908	736	502	745	1615	528
Mean Length (cm)	53.48	53.30	54.28	55.72	51.31	52.23	54.29	55.31	52.35	53.73
Mean Weight (Kg)		1.52		1.68		1.45		1.63		1.50
Total Wt.Landed(Tons)										
Mesh Size (inches) 1)	4⅜n	4⅜n	4½n	4½n	4⅜n	4⅜n	4⅜n	4⅜n	4⅜p	4⅜p
Range of Depths (fm)	20-65	20-65	15-60	15-60	4-55	4-55	10-120	10-120	6-75	6-75

1) n = nylon; p = perlon

TABLE 5 CANADA (Quebec) - 1960 LENGTH FREQUENCIES - COD by A. Marcotte
J.-M. Boulanger

Commercial Landings

Vessel Type	Longliners						
Division	4S[1]			4T[2]			
Month	July	August	Sept.	August	Sept.	Oct.	Nov.
3-cm group	FREQUENCIES in ‰						
30-32	-	-	-	-	-	4	7
33-35	-	-	-	2	-	4	7
36-38	-	-	-	7	-	7	18
39-41	1	-	1	7	19	11	62
42-44	3	1	-	14	30	48	82
45-47	11	3	7	29	43	59	152
48-50	56	14	8	50	40	93	116
51-53	118	32	27	45	38	63	110
54-56	155	43	52	64	43	104	91
57-59	152	59	64	41	70	115	73
60-62	143	68	97	38	53	74	70
63-65	119	75	95	55	64	41	28
66-68	82	85	100	57	47	48	33
70-71	57	95	110	45	26	63	110
72-74	44	123	105	52	13	15	26
75-77	11	105	82	31	19	22	25
78-80	11	78	83	24	17	19	12
81-83	11	70	50	31	19	22	25
84-86	8	57	45	29	26	4	10
87-89	9	32	36	29	28	4	10
90-92	6	28	16	19	45	7	1
93-95	1	19	11	31	23	15	6
96-98	2	5	8	41	49	15	6
99-101	-	8	3	69	38	22	4
102-104	-	-	-	36	28	19	1
105-107	-	-	-	33	45	22	-
108-110	-	-	-	26	38	22	-
111-113	-	-	-	24	11	11	3
114-116	-	-	-	5	21	-	1
117-119	-	-	-	17	32	11	-
120-122	-	-	-	21	19	15	1
123-125	-	-	-	12	6	7	1
126-128	-	-	-	5	15	-	-
129-131	-	-	-	-	4	4	-
132-134	-	-	-	5	4	15	-
>135[3]	-	-	-	5	16	11	1
Total ‰	1000	1000	1000	999	999	1001	998
Number of Samples	1	1	1	1	1	1	3
Number Fish Measured	1000	1000	1000	419	470	270	724
Mean Length (cm)	...	...	...	78.38	79.88	67.81	55.19
Mean Weight (Kg)							
Total Wt. Landed (Tons)	...	...	...	2.4	2.9	1.0	...
Hook Size	#15	#15	#15	#14	#14	#14	#14
Range of Depths (fm)	0-90	0-90	0-90	27	30	29-33	20-45

[1] Contributor - J.-M. Boulanger. Vessel Tonnage - <15 tons. [2] Contributor - A. Marcotte. No vessel tonnage indicated. [3] 135-137 (4T): Sept.-6, Oct.-7, Nov.-1; 138-140 (4T): Aug.-5; Sept.-4, Oct.-4; 141-143 (4T): Sept.-4; 150-152 (4T): Sept.-2.

TABLE 6 CANADA (Quebec) - 1960 LENGTH FREQUENCIES - COD by A. Marcotte[1)] J.-M. Boulanger[2)]

Research Catches

Vessel Type	Otter Trawler					Cod Trap			
Division	4T					4S			
Month	May	June	July	Aug.	Nov.	June	July	June	July
3-cm group	FREQUENCIES in °/oo								
24-26	3	7	-	-	4	-	-	-	13
27-29	44	12	4	9	4	-	-	9	112
30-32	93	39	8	7	4	2	-	37	272
33-35	134	39	21	24	24	2	-	78	270
36-38	169	86	32	20	40	-	3	112	137
39-41	155	66	51	44	48	13	16	132	61
42-44	101	70	74	99	127	28	51	127	35
45-47	52	80	86	156	155	110	98	125	20
48-50	46	103	98	128	171	146	190	105	21
51-53	46	84	141	145	127	167	144	77	14
54-56	27	82	114	99	100	182	153	68	13
57-59	46	94	99	95	44	128	139	48	12
60-62	11	59	78	51	48	98	88	36	8
63-65	27	47	58	26	28	56	61	21	5
66-68	11	38	41	31	8	32	30	12	3
69-71	5	31	31	15	36	19	7	7	1
72-74	11	21	17	18	8	7	12	3	1
75-77	14	16	11	9	8	4	3	1	1
78-80	3	7	7	2	12	4	5	1	1
81-83	3	7	4	2	-	-	-	-	-
84-86	-	2	1	7	-	-	-	-	-
87-89	-	-	2	-	-	-	-	-	-
90-92	-	5	3	2	-	2	-	1	-
93-95	-	5	2	-	-	-	-	-	-
96-98	-	-	2	2	4	-	-	-	-
99-101	-	-	2	-	-	-	-	-	-
102-104	-	-	3	2	-	-	-	-	-
105-107	-	-	2	2	-	-	-	-	-
108-110	-	-	3	-	-	-	-	-	-
111-113	-	-	1	-	-	-	-	-	-
114-116	-	-	2	4	-	-	-	-	-
Total °/oo	1001	1000	998	999	1000	1000	1000	1000	1000
Number of Samples	1	2	2	2	1	7	17	7	17
Number Fish Measured	367	426	975	454	251	538	430	1491	5086
Mean Length (cm)	42.64	51.09	54.28	52.12	50.41	...	...	...	...
Mean Weight (Kg)									
Total Wt Landed (Tons)									
Mesh Size (inches) [3)]	4½	4½	4½	4½	4½	4½n	4½n	3c	3 c
Range of Depths (fm)	60	60	60	60	45-60	10	10	10	10

1) Contributor for 4T. 2) Contributor for 4S. 3) n = nylon; c = cotton

TABLE 7 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - COD

by A.M.Fleming
M. O'Hanlon

Commercial Landings

Gear	Otter Trawl Offshore			Cod Trap Inshore				
Division	3L		3P South	3L			3P South	
Month	May	Sept.	Jan.	June	July	Aug.	May	July
3-cm Group	FREQUENCIES in °/oo							
30-32	-	-	-	1	-	-	-	-
33-35	-	-	-	3	2	-	-	6
36-38	-	-	-	14	7	-	-	45
39-41	-	-	-	40	27	3	23	103
42-44	7	2	5	92	75	13	94	161
45-47	68	10	10	145	107	60	178	163
48-50	153	81	91	170	147	78	178	149
51-53	214	162	197	164	160	101	173	125
54-56	128	184	202	143	138	143	122	97
57-59	109	146	148	91	112	136	94	57
60-62	57	114	112	51	75	88	51	34
63-65	77	63	62	34	54	58	51	25
66-68	43	59	45	20	37	110	23	12
69-71	25	29	39	15	23	75	-	12
72-74	46	35	27	10	15	52	9	5
75-77	36	33	31	3	9	34	5	5
78-80	23	21	9	2	5	22	-	1
81-83	5	13	9	2	4	7	-	1
84-86	7	10	-	1	1	5	-	1
87-89	-	13	3	1	1	13	-	-
90-92	-	7	8	-	-	3	-	-
93-95	2	4	-	1	-	-	-	-
96-98	-	5	4	-	-	-	-	-
99-101	-	5	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-
105-107	-	3	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-
111-113	-	2	-	-	-	-	-	-
Total °/oo	1000	1001	1002	1003	999	1001	1001	1002
Serial Numbers								
Number of Samples	1	3	2	15	37	2	1	7
Number Fish Measured	439	659	520	4081	8037	355	214	2628
Mean Length (cm)	57.47	60.76	58.61	51.88	54.02	60.43	51.94	49.05
Mean Weight (Kg)	1.77	2.21	1.99	1.14	1.29	1.81	1.27	1.27
Total Wt.Landed(Tons)	848	736	769	...	...	...	...	...
Estimated No. Landed	481,785	330,310	385,677	...	...	...	...	...
Mesh Size (inches)[1]	Ln	Lm&n	Lm	4c	4c	4c	4c	4c
	(mesh sizes vary from 3 7/8" to 4 3/4")							
Range of Depths (fm)	48-70	20-35	75-105	10-25	10-17	10-14	20	12-18

[1] L = large (mesh sizes vary from 3 7/8" to 4 3/4"); n = nylon; m = manila; c = cotton.

(cont'd.)

TABLE 7 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - COD by A.M.Fleming
(cont'd.) M. O'Hanlon

Commercial Landings

Gear	Line Trawl Inshore				Handline Inshore		
Division	3L	3P South			3L		
Month	Sept.	May	July	Sept.	June	July	Sept.
3-cm Group	FREQUENCIES in °/oo						
36-38	9	-	-	4	22	1	2
39-41	25	14	4	5	30	7	3
42-44	48	21	18	10	38	45	7
45-47	35	60	57	25	119	79	21
48-50	67	70	89	33	121	87	36
51-53	64	97	117	73	166	105	72
54-56	102	96	122	79	127	126	101
57-59	123	103	103	85	113	136	144
60-62	99	91	93	107	83	105	128
63-65	110	80	89	124	22	100	131
66-68	48	67	67	81	36	83	132
69-71	64	68	70	79	61	48	95
72-74	46	72	48	97	22	32	49
75-77	36	43	40	57	22	24	18
78-80	27	34	34	54	-	17	23
81-83	23	22	10	28	8	4	19
84-86	11	9	10	22	-	1	1
87-89	15	15	8	11	-	-	5
90-92	16	10	7	7	-	-	2
93-95	13	12	4	8	8	-	6
96-98	3	5	4	4	-	-	3
99-101	6	5	1	1	-	1	-
102-104	1	-	2	1	-	-	-
105-107	3	7	2	-	-	-	-
108-110	2	-	1	1	-	-	1
111-113	3	-	1	4	-	-	2
114-116	-	-	1	-	-	-	-
117-119	1	-	-	-	-	-	-
120-122	-	-	-	-	-	-	-
123-125	2	-	-	-	-	-	-
-	-	-	-	-	-	-	-
135-137	-	-	1	-	-	-	-
Total °/oo	1002	1001	1003	1000	998	1001	1001
Serial Numbers							
Number of Samples	6	3	7	8	1	13	7
Number Fish Measured	657	411	1669	1258	133	1612	687
Mean Length (cm)	62.32	62.70	61.17	65.42	55.17	58.08	62.69
Mean Weight (Kg)	2.07	2.06	1.96	2.32	1.38	1.59	1.96
Total Wt.Landed(Tons)							
Estimated No. Landed							
Hook Size	#14&15	#14&15	#14&15	#14&15	#3020&3021	#3020&3021	#3020&3021
Range of Depths (fm)	25-35	40-75	12-22	10-50	7	9-15	20-35

(cont'd.)

TABLE 7 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - COD (cont'd.)

by A.M.Fleming
M. O'Hanlon

Commercial Landings

Gear	Longline Inshore		Jigger Inshore			
Division	3L		3L		3P South	
Month	July	Sept.	June	July	May	July
3-cm Group	FREQUENCIES in °/oo					
33-35	-	-	-	3	10	-
36-38	-	-	34	11	26	-
39-41	-	2	123	28	67	4
42-44	4	10	166	61	120	37
45-47	12	27	89	119	210	94
48-50	13	53	190	134	165	129
51-53	22	77	152	141	163	168
54-56	42	93	79	113	126	161
57-59	63	141	67	117	63	118
60-62	82	158	49	83	30	92
63-65	109	125	36	61	22	69
66-68	134	110	-	51	-	37
69-71	119	81	8	32	-	36
72-74	88	56	4	11	-	20
75-77	78	15	-	15	-	15
78-80	52	15	4	8	-	10
81-83	39	10	-	3	-	5
84-86	24	5	-	6	-	4
87-89	21	5	-	1	-	1
90-92	20	5	-	-	-	1
93-95	18	3	-	-	-	-
96-98	18	2	-	1	-	-
99-101	12	1	-	1	-	-
102-104	7	3	-	-	-	-
105-107	8	2	-	-	-	-
108-110	3	1	-	-	-	-
111-113	3	-	-	-	-	-
114-116	3	-	-	-	-	-
117-119	3	-	-	-	-	-
120-122	1	1	-	-	-	-
>122 2)	3	-	-	-	-	-
Total °/oo	1001	1001	1001	1000	1002	1001
Serial Numbers						
Number of Samples	13	6	1	10	2	5
Number Fish Measured	1697	1229	257	1141	223	1337
Mean Length (cm)	71.08	62.10	49.26	54.88	49.08	56.13
Mean Weight (Kg)	2.91	1.96	0.97	1.36	0.87	1.49
Total Wt.Landed (Tons)						
Estimated No. Landed						
Hook Size	#17	#17	#5	#5	#5	#5
Range of Depths (fm)	105-150	15-45	15	8-25	14	12-40

2) 1 at 123-125; 1 at 126-128; 1 at 129-131.

TABLE 8 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - COD by A.W.May

Commercial Catches

Gear	Trap	
Division	2J	
Month	July	August
3-cm Group	FREQUENCIES in ‰	
39-41	6	-
42-44	13	23
45-47	32	33
48-50	51	53
51-53	119	103
54-56	159	142
57-59	193	185
60-62	170	170
63-65	116	117
66-68	74	95
69-71	33	45
72-74	18	20
75-77	9	5
78-80	5	3
81-83	1	2
84-86	-	3
87-89	1	-
Total ‰	1000	999
Serial Numbers		
Number of Samples	5	2
Number Fish Measured	1520	600
Mean Length (cm)	58.510	58.921
Mean Weight (Kg)	1.864	1.982
Total Wt. Landed (Tons)		
Estimated No. Landed		
Mesh Size (inches)[1]	4c	4c
Range of Depths (fm)	6-13	6-12

1)

TABLE 9 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - COD by A.W.May

Research Catches

Gear	Jigger	
Division	2G	2H
Month	July	July
3-cm Group	FREQUENCIES in °/oo	
42-44	-	3
45-47	-	6
48-50	19	31
51-53	133	145
54-56	222	221
57-59	285	240
60-62	171	163
63-65	92	126
66-68	44	39
69-71	29	16
72-74	6	10
75-77	-	2
Total °/oo	1001	1002
Serial Numbers		
Number of Samples	2	4
Number Fish Measured	316	621
Mean Length (cm)	58.267	58.024
Mean Weight (Kg)	1.705	1.755
Total Wt. Landed (Tons)		
Estimated No. Landed		
Hook Size	#5	#5
Range of Depths (fm)	6-12	2-24

TABLE 10 DENMARK (Greenland) - 1960 LENGTH FREQUENCIES - COD[1] by Paul M. Hansen

West Greenland (Banks) - Research Catches

Location	1B Store Hellefiske Bank		1C Lille Hellefiske Bank				Banana Bank	
Gear[2]	HL	LL	HL	HL	LL	LL	HL	LL
Month	July							
3-cm group	FREQUENCIES in ‰							
33-35	4	-	-	-	-	-	-	-
36-38	-	-	-	-	-	-	14	-
39-41	16	-	-	-	-	-	35	10
42-44	28	3	-	-	-	6	14	5
45-47	24	-	-	5	-	-	21	5
48-50	28	21	-	-	-	6	-	10
51-53	55	17	-	5	-	-	21	24
54-56	71	14	-	10	-	-	63	19
57-59	83	62	-	16	8	18	28	29
60-62	123	110	9	26	8	18	35	53
63-65	103	96	-	47	11	31	35	53
66-68	91	82	45	73	49	31	56	58
69-71	130	120	73	88	53	55	35	34
72-74	99	113	123	135	133	98	77	101
75-77	55	96	150	124	98	129	42	92
78-80	36	69	191	181	186	86	92	101
81-83	36	41	168	130	144	135	127	126
84-86	8	31	105	98	117	172	134	106
87-89	8	41	68	36	87	86	85	43
90-92	4	31	45	16	64	43	21	53
93-95	-	17	9	-	23	31	42	24
96-98	-	21	5	10	15	12	14	24
99-101	-	3	5	-	-	6	7	5
102-104	-	7	-	-	4	12	-	19
105-107	-	3	5	-	-	-	-	5
-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	6	-	-
120-122	-	-	-	-	-	6	-	-
123-125	-	-	-	-	-	12	-	-
Total ‰	1002	998	1001	1000	1000	999	998	999
Serial Numbers	1	1a	2	3	2a	3a	4	4a
Number Fish Measured	253	291	220	193	264	163	142	207
Mean Length (cm)	64.2	79.3	79.2	74.7	80.5	77.5	72.0	76.3
Mean Weight (Kg)		3.9						
Total Wt.Landed(Tons)								
Estimated No. Landed								
Hook Size								
Range of Depths (m)	ca.50	45-135			80-100	80-130		60-100

1) The age frequencies of these samples are given in Table 23 ; the age/length keys are given in Table 31.

2) HL - Handline; LL - Longline.

(cont'd.)

TABLE 10 DENMARK (Greenland) - 1960 LENGTH FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.)

West Greenland (Banks) - Research Catches

Location	1D								
	Fylla					Fiskenaes		Dana	
Gear[2]	HL	LL				HL	LL	HL	LL
Month	July	Feb.	Apr.	July				August	
3-cm group	FREQUENCIES in ‰								
39-41	-	-	-	8	-	-	-	-	-
42-44	6	-	-	-	-	-	-	-	-
45-47	3	12	-	-	-	-	-	-	-
48-50	14	12	-	-	-	-	-	5	-
51-53	44	-	-	-	8	-	7	21	-
54-56	52	25	6	23	-	-	-	-	-
57-59	47	-	17	8	-	10	-	5	10
60-62	83	49	46	31	-	-	14	11	10
63-65	102	74	126	69	8	40	21	-	29
66-68	116	74	126	100	41	59	57	37	10
69-71	99	123	166	77	66	119	43	75	39
72-74	135	74	246	123	107	99	93	102	78
75-77	118	111	80	115	115	89	71	160	78
78-80	63	111	69	131	172	119	100	139	59
81-83	74	148	51	92	148	178	129	123	167
84-86	19	111	40	77	131	168	107	123	108
87-89	11	37	17	46	74	50	107	75	127
90-92	3	25	-	31	66	20	71	53	59
93-95	-	12	-	23	8	10	86	11	59
96-98	3	-	6	23	25	-	29	37	69
99-101	6	-	-	15	16	20	29	16	49
102-104	-	-	-	8	-	10	14	-	20
105-107	3	-	-	-	16	10	7	5	-
108-110	-	-	-	-	-	-	14	-	10
111-113	-	-	-	-	-	-	-	-	10
114-116	-	-	6	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-
126-128									10
Total ‰	1001	998	1002	1000	1001	1001	999	998	1001
Serial Numbers	8	5	6	8a	9	10	10a	11	11a
Number Fish Measured	363	81	175	130	122	101	140	187	102
Mean Length (cm)	69.1	71.8	72.3	75.7	80.6	76.3	83.4	79.0	83.3
Mean Weight (Kg)	3.0	4.307	3.2						
Total Wt.Landed(Tons)									
Estimated No. Landed									
Hook Size									
Range of Depths (m)	150-180	90-125	85-150	150	70-100		60-80		60-80

1) The age frequencies of these samples are given in Table 23; the age/length keys are given in Table 31.

2) HL - Handline; LL - Longline.

TABLE 11 DENMARK (Greenland) - 1960 LENGTH FREQUENCIES - COD[1] by Paul M. Hansen

West Greenland (Inshore and Fjords) - Research Catches

Location	1D							
	Godthåb Fjord							
Gear	Handline							
Month	February			April			June	July
3-cm group	FREQUENCIES in ‰							
24-26	-	-	-	-	-	-	-	5
27-29	-	-	-	-	-	-	-	15
30-32	-	-	-	23	14	-	-	30
33-35	-	-	-	91	-	-	-	54
36-38	4	-	-	129	70	-	9	104
39-41	8	-	-	76	127	-	32	119
42-44	8	-	-	38	56	-	50	104
45-47	13	-	-	121	85	8	108	109
48-50	25	-	-	121	169	-	239	119
51-53	51	-	-	91	239	8	257	129
54-56	97	-	10	38	28	40	126	94
57-59	97	34	31	38	56	111	36	10
60-62	85	40	21	38	56	127	54	35
63-65	47	63	73	53	-	135	14	10
66-68	55	63	135	8	28	79	14	25
69-71	93	80	125	53	-	143	5	5
72-74	114	172	135	15	28	111	18	25
75-77	89	155	146	30	14	71	14	-
78-80	59	144	135	-	28	63	14	5
81-83	64	126	62	23	-	48	9	-
84-86	30	34	52	-	-	32	5	-
87-89	30	46	21	-	-	8	-	-
90-92	4	11	52	15	-	16	-	-
93-95	17	6	-	-	-	-	-	-
96-98	4	-	-	-	-	-	-	5
99-101	4	11	-	-	-	-	-	-
102-104	-	6	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-
117-119	-	6	-	-	-	-	-	-
Total ‰	998	997	998	1001	998	1000	1004	1002
Serial Numbers	33	34	35	24	32	36	25	27
Number of Samples								
Number Fish Measured	236	174	96	132	71	126	222	202
Mean Length (cm)	67.8	75.4	73.9	44.3	50.6	68.5	52.8	46.8
Mean Weight (Kg)	3.6	4.5	4.5	1.9	...	...	...	...
Total Wt.Landed(Tons)								
Estimated No. Landed								
Hook Size								
Range of Depths (m)	240	240	...	70-90	60-100	...	...	...

1) The age frequencies of these samples are given in Table 24; the age/length keys are given in Table 32.

(cont'd.)

TABLE 11 DENMARK (Greenland) - 1960 LENGTH FREQUENCIES - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches

Location	1D						1F	
	Godthåb Fjord						Kitsigssut & Kap Egede	Kitsigssut
Gear	Handline	Longline					Handline	Longline
Month	Sept.	April	July	October	November		Sept.	Sept.-Oct.
3-cm group	FREQUENCIES in ‰							
30-32	9	-	-	-	-	-	-	-
33-35	14	-	13	-	-	-	-	-
36-38	50	-	-	-	-	-	-	-
39-41	196	8	-	6	-	-	-	-
42-44	187	8	-	-	55	7	13	1
45-47	151	8	13	-	-	22	21	2
48-50	164	25	-	-	22	14	17	2
51-53	73	8	13	6	44	-	51	4
54-56	37	83	13	26	22	14	51	2
57-59	41	58	13	6	44	-	30	7
60-62	32	158	64	19	-	43	26	22
63-65	-	108	26	45	44	36	64	51
66-68	23	108	51	96	44	51	128	94
69-71	14	75	103	90	88	72	150	204
72-74	5	125	192	109	121	145	120	215
75-77	-	50	103	122	187	188	137	172
78-80	-	50	77	122	99	87	115	118
81-83	5	42	90	135	77	152	43	57
84-86	-	17	77	83	66	80	30	19
87-89	-	17	64	51	44	29	4	16
90-92	-	17	38	26	44	7	-	6
93-95	-	17	13	19	11	7	-	4
96-98	-	17	13	13	-	29	-	1
99-101	-	-	13	-	11	7	-	-
102-104	-	-	-	6	-	-	-	1
105-107	-	-	13	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-
111-113	-	-	-	6	11	-	-	-
114-116	-	-	-	6	-	-	-	1
Total ‰	1001	999	1002	998	1001	997	1000	999
Serial Numbers	28	23	26	29	30	31		
Number of Samples								
Number Fish Measured	219	120	78	156	91	138	234	829
Mean Length (cm)	46.8	67.6	75.2	76.2	73.6	75.1	66.9	73.0
Mean Weight (Kg)	ca.1.4	3.1	4.2	4.8	4.5	4.6	3.0	3.5
Total Wt.Landed(Tons)								
Estimated No. Landed								
Hook Size								
Range of Depths	...	150m	20-80m	210-100m	50-110m	ca.300m	...	60fm

1) The age frequencies of these samples are given in Table 24; the age/length keys are given in Table 32.

TABLE 12 DENMARK (Greenland) - 1960 LENGTH FREQUENCIES - COD[1] by Paul M. Hansen

Greenlanders' - Commercial Landings

Division	1A		1B			1D		1E		1F
Month	Aug.-Sept.	Sept.	July-Aug.	Aug. Sept.	Sept. Oct.	July	Sept.	May-June	Oct.	Sept.
3-cm group	FREQUENCIES in ‰									
30-32	-	-	5	-	2	-	-	-	-	-
33-35	-	-	-	-	-	-	-	-	-	-
36-38	-	-	-	-	7	-	-	-	-	-
39-41	-	-	10	-	2	-	-	6	-	-
42-44	-	-	25	-	-	-	-	84	-	-
45-47	-	-	30	1	7	5	30	112	10	-
48-50	-	-	65	10	9	55	126	89	26	-
51-53	-	-	50	10	19	125	271	84	57	-
54-56	-	-	70	21	30	85	271	34	41	-
57-59	-	-	95	16	39	80	146	56	10	-
60-62	-	-	111	59	174	110	30	50	36	-
63-65	42	5	116	62	95	45	20	61	52	29
66-68	53	15	85	117	70	70	25	73	103	58
69-71	95	20	111	168	135	90	15	101	113	87
72-74	284	60	35	130	108	100	15	112	170	130
75-77	147	75	60	148	117	55	15	50	180	116
78-80	126	165	45	71	109	65	5	45	67	188
81-83	42	120	20	58	65	35	10	22	41	174
84-86	74	170	30	46	54	45	-	-	41	101
87-89	42	140	10	27	30	15	5	22	31	43
90-92	53	80	15	38	22	10	-	-	15	29
93-95	21	70	-	10	6	-	5	-	-	43
96-98	21	50	+	3	-	10	5	-	-	-
99-101	-	15	-	1	-	-	-	-	-	-
102-104	-	10	5	1	-	-	5	-	-	-
105-107	-	-	-	1	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-
111-113	-	-	5	-	-	-	-	-	-	-
114-116	-	5	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
138-140	-	-	-	-	-	-	-	-	5	-
Total ‰	1000	1000	998	998	1000	1000	999	1001	998	998
Serial Numbers	14	13	17	16	15	18	19	20	21	22
Number of Samples										
Number Fish Measured	95	200	199	677	539	200	199	179	194	69
Mean Length (cm)	76.1	84.7	64.1	72.8	71.1	65.9	55.0	60.8	71.1	78.5
Mean Weight (Kg)	ca.4.8	6.3	2.7	...	...	2.8	1.8	...	...	...
Total Wt Landed (Tons)										
Estimated No. Landed										
Mesh or Hook Size										
Range of Depths (fm)										

1) The age frequencies of these samples are given in Table 25 ; the age/length keys are given in Table 33 .

TABLE 13 GERMANY - 1960 LENGTH FREQUENCIES - COD[1] by Arno Meyer

OTTER TRAWLERS[2] Commercial Landings

Division	1C		1C/D	1D		1E
Location	Banana Bank		Fyllas and Lille Hellefiske Bank	Fyllas Bank		Noname Bank
Month	June	December	July	April	August	June
3-cm group	FREQUENCIES in ‰					
45-47	-	1	-	-	-	-
48-50	-	11	1	-	1	1
51-53	-	22	17	1	2	4
54-56	19	27	53	32	4	4
57-59	42	77	85	67	14	15
60-62	75	168	101	75	74	57
63-65	84	200	72	93	53	74
66-68	135	146	137	171	92	90
69-71	214	107	100	190	186	146
72-74	144	73	135	141	162	126
75-77	100	65	104	94	115	136
78-80	69	47	67	43	114	124
81-83	42	17	57	29	70	73
84-86	29	18	16	9	41	59
87-89	24	10	27	12	22	31
90-92	16	2	10	10	19	25
93-95	4	2	8	7	20	11
96-98	2	1	7	9	1	10
99-101	1	2	2	5	4	3
102-104	-	1	1	3	3	2
105-107	-	1	3	2	3	3
108-110	-	1	1	4	-	4
111-113	-	-	-	1	-	2
114-116	-	1	-	1	-	-
117-119	-	-	1	-	-	-
>119	-	-	1	1	-	-
Total ‰	1000	1000	1000	1000	1000	1000
Serial Numbers	46	58	49	35	50	41-44
Number of Samples	1	1	1	1	1	4
Number Fish Measured	338	512	449	741	449	1875
Mean Length (cm)	71.7	67.4	70.5	70.8	74.2	75.1
Mean Weight (Kg)	2.5	2.5	3.3	2.4	3.0	3.0
Total Wt.Landed (Tons)	53	101	21	79	101	481
Estimated No. Landed	20,832	40,516	6,507	33,118	33,497	162,061
Mesh Size (mm)	110	110	110	110	110	110
Range of Depths (fm)	...	100-110	...	...	50-60	...

[1] The age frequencies of these samples are given in Table 26; the age/length frequencies are given in Table 34.
[2] 500-900 gross tons.

(cont'd.)

TABLE 13 GERMANY - 1960 LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)
OTTER TRAWLERS[2] - Commercial Landings

Location	East Greenland									
	Angmagssalik			Tordenskjold		Fylkir Bank		Dohrn Bank		
Month	Jan.	Feb.	March	March	April	June	July	Sept.	Oct.	Nov.
3-cm group	FREQUENCIES in °/oo									
45-47	-	-	-	-	-	-	3	-	-	-
48-50	-	-	-	-	-	8	29	-	-	-
51-53	-	-	-	-	-	19	39	-	-	-
54-56	2	-	-	2	-	28	69	-	1	1
57-59	26	-	-	-	7	85	42	-	4	2
60-62	67	-	9	24	13	122	53	2	12	4
63-65	62	19	38	64	30	136	83	10	16	22
66-68	100	64	48	107	87	136	60	15	22	20
69-71	141	151	100	117	86	159	88	44	47	57
72-74	91	129	209	171	136	85	120	50	87	81
75-77	146	198	133	164	165	65	118	95	118	134
78-80	162	165	182	142	151	52	100	116	134	153
81-83	105	127	141	97	127	31	68	134	176	150
84-86	60	66	79	59	86	17	35	170	142	89
87-89	19	43	30	26	61	22	36	140	92	106
90-92	9	20	13	12	31	13	33	83	81	59
93-95	6	10	8	9	11	6	16	45	43	60
96-98	3	4	8	4	-	7	3	48	14	37
99-101	1	2	1	-	2	4	2	13	7	14
102-104	-	-	1	1	1	2	1	22	-	6
105-107	-	-	-	-	2	-	1	3	-	4
108-110	-	-	-	1	1	1	1	10	4	1
111-113	-	2	-	-	1	-	-	-	-	-
114-116	-	-	-	-	2	1	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-
>122	-	-	-	-	-	1	-	-	-	-
Total °/oo	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers	13	16	32	24/27	33	45	47	53	54	56/57
Number of Samples	1	1	1	2	7	1	1	1	1	2
Number Fish Measured	431	369	344	937	423	488	443	381	386	777
Mean Length (cm)	74.4	77.5	77.3	75.5	77.8	69.3	71.7	84.6	81.8	87.7
Mean Weight (Kg)	2.9	3.2	3.0	2.9	3.3	2.4	2.7	4.5	4.3	4.7
Total Wt.Landed (Tons)	19	85	123	149	169	67	28	14	39	105
Estimated No. Landed	6,417	26,752	40,780	51,624	50,777	28,410	10,523	3,118	9,027	25,261
Mesh Size (mm)	110	110	110	110	110	110	110	110	110	110
Range of Depths (fm)										

[1] The age frequencies of these samples are given in Table 26; the age/length frequencies are given in Table 34.

[2] 500-900 gross tons.

TABLE 14 GERMANY - 1960 LENGTH FREQUENCIES - COD[1] by Arno Meyer

OTTER TRAWLERS[2] Research Catches

Division	1C	1D		1E	1F	East Greenland		
Location	Lille Hellefiske Bank	Fyllas	Fiskenaes	Danas	Nanortalik	Discord-Fylkir	Mosting	Ang-mags-salik
Month	April				May			
3-cm group	FREQUENCIES in ‰							
30-32	16	-	-	-	-	-	-	-
33-35	4	-	-	-	4	-	-	-
36-38	20	5	-	5	7	-	-	-
39-41	24	-	-	5	42	-	6	-
42-44	4	-	-	47	130	-	11	-
45-47	28	14	-	98	46	-	14	-
48-50	20	23	6	90	42	-	4	-
51-53	52	14	19	66	28	-	-	-
54-56	76	9	-	33	11	15	4	12
57-59	113	46	12	47	39	-	4	12
60-62	85	73	38	52	63	8	8	48
63-65	93	160	128	57	63	8	42	83
66-68	126	174	103	118	91	-	69	119
69-71	122	183	211	109	113	39	76	155
72-74	81	110	140	99	85	39	106	167
75-77	48	69	91	67	74	101	141	95
78-80	36	50	70	42	77	225	128	119
81-83	12	37	82	23	49	108	119	71
84-86	20	14	44	19	18	116	80	59
87-89	8	5	25	18	11	108	77	12
90-92	-	9	25	5	7	62	36	36
93-95	8	5	-	-	-	62	29	12
96-98	-	-	-	-	-	23	8	-
99-101	-	-	-	-	-	31	-	-
102-104	-	-	-	-	-	15	4	-
105-107	-	-	-	-	-	8	4	-
108-110	-	-	6	-	-	-	-	-
111-113	4	-	-	-	-	-	7	-
-	-	-	-	-	-	-	-	-
>122	-	-	-	-	-	32	23	-
Total ‰	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers	2,3,5,9	10-12	13,16,17	18-20	38-41	58-73	77-119	121+128
Number of Samples	4	3	3	3	4	6	4	2
Number Fish Measured	248	218	157	212	284	129	275	84
Mean Length (cm)	63.8	68.7	72.9	63.3	63.6	85.6	79.1	74.0
Mesh Size (mm)	110	110	110	110	110	110	110	110
Range of Depths (fm)	75-100	80-160	120-170	40-120	160-270	100-200	130-200	240

[1] The age frequencies of these samples are given in Table 27; the age/length frequencies are given in Table 35.

[2] 500-900 gross tons.

TABLE 15 GERMANY - 1960 LENGTH FREQUENCIES - COD by Arno Meyer

Research Vessel[1] - Research Catches - trawl

Division	1D
Location	Danas
Month	May
3-cm group	F R E Q U E N C I E S in °/oo
45-47	7
48-50	15
51-53	24
54-56	24
57-59	27
60-62	51
63-65	71
66-68	134
69-71	182
72-74	160
75-77	114
78-80	73
81-83	53
84-86	24
87-89	24
90-92	3
93-95	7
96-98	5
-	-
105-107	3
Total °/oo	1001
Serial Numbers	573-582
Number of Samples	4
Number Fish Measured	412
Mean Length (cm)	71.4
Mesh Size (mm)	110
Range of Depths (fm)	160-170

1) 999 gross tons

TABLE 16 NORWAY - 1960 LENGTH FREQUENCIES - COD[1)] by E. Bratberg

Research Catches

Gear	Otter Trawl		Bottom Longline		
Division	1C	1D	1C	1D	1E
Month	April				
3-cm group	FREQUENCIES in ‰				
39-41	17	-	-	-	-
42-44	33	20	-	-	-
45-47	116	109	-	-	3
48-50	273	99	10	-	13
51-53	116	188	-	13	23
54-56	66	59	10	21	23
57-59	58	30	19	21	28
60-62	66	20	29	34	61
63-65	50	30	77	73	84
66-68	50	79	183	91	105
69-71	58	79	192	158	77
72-74	74	109	144	150	117
75-77	17	89	135	130	135
78-80	8	59	67	60	99
81-83	-	20	58	80	69
84-86	-	10	48	70	51
87-89	-	-	10	44	41
90-92	-	-	-	26	23
93-95	-	-	10	16	15
96-98	-	-	-	3	10
99-101	-	-	-	10	8
102-104	-	-	-	3	5
105-107	-	-	10	-	-
108-110	-	-	-	-	3
111-113	-	-	-	-	-
114-116	-	-	-	-	8
Total ‰	1002	1000	1002	1003	1001
Serial Numbers					
Number of Samples	1	1	1	4	3
Number Fish Measured	121	101	104	386	392
Mean Length (cm)	55.76	61.20	72.09	74.16	73.55
Mean Weight (Kg)					
Total Wt. Landed (Tons)					
Estimated No. Landed					
Mesh or Hook Size					
Range of Depths (fm)					

[1)] The age frequencies of these samples are given in Table 28; the age/length keys are given in Table 36.

TABLE 17 PORTUGAL - 1960 LENGTH FREQUENCIES - COD[1)]

by Mario J. Ruivo
Glicinia V. Quartin

OTTER TRAWLERS - Commercial Catches before Discarding

Division	1D	1E	1F			
Month	May		April			
			Morning	Evening		
3-cm group	FREQUENCIES in ‰					
36-38	-	-	-	-	7	-
39-41	55	3	-	-	73	15
42-44	115	107	4	-	200	35
45-47	175	161	28	13	187	30
48-50	155	120	16	20	110	20
51-53	110	47	4	-	63	20
54-56	45	30	-	7	40	45
57-59	15	37	48	33	40	25
60-62	20	30	104	93	67	95
63-65	40	54	132	140	127	170
66-68	55	114	164	233	53	155
69-71	50	97	168	160	30	150
72-74	55	64	108	107	3	110
75-77	30	50	76	87	-	60
78-80	25	10	60	47	-	45
81-83	40	47	48	33	-	10
84-86	5	23	28	13	-	5
87-89	-	-	12	7	-	5
90-92	10	3	4	-	-	-
93-95	-	3	-	7	-	-
-	-	-	-	-	-	-
123-125	-	-	-	-	-	5
Total ‰	1000	1000	1004	1000	1000	1000
Serial Numbers	7-10	6-8-9	2	2	4	1-3
Number of Samples	2	3	1	1	1	2
Number Fish Measured	200	299	250	150	300	200
Mean Length (cm)	54.7	59.9	68.9	68.5	51.7	65.4
Mean Weight (Kg)						
Total Wt. Landed (Tons)						
Estimated No. Landed						
Mesh Size (mm)	114	114	114	114	114	114
Range of Depths (m)	65-100	160-200	130	130	120	130-150

1) The age frequencies of Serial Nos. 7-10, 6-8-9, and 1-3 are given in Table 29; the age/length frequencies are given in Table 37.

(cont'd.)

TABLE 17 PORTUGAL - 1960 LENGTH FREQUENCIES - COD[1)]

(cont'd.)

by Mario J. Ruivo
Glicinia V. Quartin

OTTER TRAWLERS - Commercial Catches before Discarding

Division	2H			2J			
Month	September			May	June		
	Morning	Evening			Morning	Evening	
3-cm group	FREQUENCIES in ‰						
36-38	8	7	-	10	13	13	-
39-41	71	69	25	10	34	39	4
42-44	75	97	53	10	81	75	28
45-47	125	104	76	100	102	95	80
48-50	158	146	101	100	122	114	130
51-53	125	201	134	130	116	160	158
54-56	100	118	121	180	134	121	164
57-59	146	132	164	190	104	121	150
60-62	100	69	101	120	116	98	94
63-65	38	28	116	60	62	72	76
66-68	54	21	66	60	49	36	50
69-71	-	7	35	30	27	6	42
72-74	-	-	8	-	15	20	10
75-77	-	-	3	-	8	13	6
78-80	-	-	-	-	8	3	2
81-83	-	-	-	-	4	3	-
84-86	-	-	-	-	-	-	-
87-89	-	-	-	-	-	3	2
90-92	-	-	-	-	1	-	-
93-95	-	-	-	-	1	-	-
96-98	-	-	-	-	-	3	-
99-101	-	-	-	-	-	-	-
102-104	-	-	-	-	1	3	2
Total ‰	1000	999	1003	1000	998	998	998
Serial Numbers	39	39	37,38,40,41	1	3-9	3-9	2,4,7,10,12
Number of Samples	1	1	4	1	2	2	5
Number Fish Measured	240	144	397	100	714	306	499
Mean Length (cm)	52.5	51.7	55.9	55.7	54.8	54.7	56.1
Mean Weight (Kg)							
Estimated No. Landed							
Mesh Size (mm)	114	114	114	114	114	114	114
Range of Depths (m)	219	219	192-256	320	294	294	230-300

1) The age frequencies of Serial Nos. 37,38,40,41 and 1 and 2;4,7,10,12 are given in Table 29; the age/length frequencies are given in Table 37.

(cont'd.)

TABLE 17 PORTUGAL - 1960 LENGTH FREQUENCIES - COD[1)] by Mario J. Ruivo
(cont'd.) Glicinia V. Quartin

OTTER TRAWLERS - Commercial Catches before Discarding

Division	2J							
Month	August			September			October	Nov.
	Morning	Evening		Morning	Evening			
	FREQUENCIES in ‰							
36-38	5	4	4	14	-	5	-	3
39-41	49	30	37	45	20	13	-	15
42-44	75	67	40	25	61	48	10	23
45-47	120	100	82	53	34	80	40	38
48-50	148	148	114	106	102	98	180	18
51-53	145	128	145	176	177	158	120	83
54-56	124	134	142	184	163	155	250	146
57-59	150	159	154	151	170	143	140	116
60-62	77	95	113	98	122	150	130	176
63-65	66	78	88	94	68	58	70	176
66-68	25	27	42	45	54	60	30	106
69-71	7	8	14	-	27	20	20	43
72-74	6	12	10	20	-	5	10	25
75-77	3	3	7	-	-	3	-	10
78-80	2	4	3	-	-	3	-	13
81-83	-	-	-	-	-	-	-	5
84-86	-	1	-	-	-	-	-	-
87-89	-	-	-	-	-	3	-	3
90-92	-	-	1	-	-	-	-	3
93-95	-	-	-	-	-	-	-	3
96-98	-	-	3	-	-	-	-	-
Total ‰	1002	998	999	1001	998	1002	1000	1005
Serial Numbers	15,17,20,23,24		13,14,16 18,22,25 26	30	30	29,31 34,35	42	43,44 46,48
Number of Samples	5	5	7	1	1	4	1	4
Number Fish Measured	1215	729	696	245	147	399	100	398
Mean Length (cm)	52.4	54.1	55.2	55.9	55.4	55.6	60.3	60.5
Mean Weight (Kg)								
Total Wt. Landed (Tons)								
Estimated No. Landed								
Mesh Size (mm)	114	114	114	114	114	114	114	114
Range of Depths (m)	201-228	201-228	183-228	228	228	210-265	146	201-301

1) The age frequencies of Serial No.13,14,16,18,22,25,26, Serial No.29,31,34,35, Serial No.42, Serial No.43,44,46,48 are given in Table 29; the age/length frequencies are given in Table 37.

(cont'd.)

by Mario J. Ruivo
Glicinia V. Quartin

LENGTH FREQUENCIES - COD

ORTUGAL - 1960

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LES - Commercial Catches before Discarding

	3K		3L				3Pn		4R	
	May		April			Nov.	March		February	
	Morning	Evening	Morning	Evening			Morning	Evening	Morning	Evening
	FREQUENCIES in °/oo									
ap	–	–	–	8	20	–	8	–	7	–
	–	–	20	27	29	8	25	14	14	20
	40	20	80	100	50	25	33	–	20	28
	36	60	44	67	83	33	58	49	28	30
	48	27	76	100	108	58	100	70	30	79
	48	113	64	47	133	100	175	91	79	93
	80	73	48	67	125	175	163	112	93	148
	76	107	60	87	133	163	104	133	148	154
	120	80	60	100	121	104	125	147	154	127
	112	113	132	60	92	125	100	168	127	119
3	76	113	104	87	38	100	33	105	119	93
6	136	73	84	113	25	33	38	35	93	55
59	44	73	80	20	17	38	21	28	55	22
62	76	47	60	53	4	21	8	14	22	20
-65	44	40	28	33	8	8	4	14	20	4
-68	32	33	28	7	13	4	4	–	4	6
-71	12	13	4	–	4	–	–	14	6	–
2-74	8	13	16	13	–	–	–	–	–	–
5-77	4	–	4	–	–	–	–	–	–	2
78-80	–	–	–	–	–	–	–	–	2	–
81-83	8	–	–	–	–	–	–	–	–	–
84-86	–	–	–	–	–	–	–	–	–	–
87-89	–	–	–	–	–	–	–	–	–	–
90-92	–	–	–	–	–	–	–	–	–	–
93-95	–	–	–	–	–	–	–	–	–	–
96-98	–	–	–	–	–	–	–	–	–	–
99-101	–	–	–	–	–	–	–	–	–	–
102-104										
Total °/oo	1000	998	1000	1001	999	999	1001	1000	998	
Serial Numbers	16	16	8	8	35	5	5	3-6	3-6	
Number of Samples	1	1	1	1	1	1	1	2	2	
Number Fish Measured	250	150	250	150	240	240	143	495	297	
Mean Length (cm)	64.1	63.0	64.0	61.7	59.2	59.1	59.7	57.7	58.2	
Mean Weight (Kg)										
Total Wt. Landed (Tons)										
Estimated No. Landed										
Mesh Size (mm)	114	114	114	114	114	114	114	114	114	
Range of Depths (m)	300	300	170	170	128	210	210	250	250	

(cont'd.)

TABLE 17 PORTUGAL - 1960 LENGTH FREQUENCIES - COD[1)]

(cont'd.)

by Mario J. Ruivo
Glicinia V. Quartin

OTTER TRAWLERS - Commercial Catches before Discarding

Division	4R			4Vn						
Month	March		April	February			March	April		
	Morning	Evening		Morning	Evening				Morning	Evening
3-cm group	FREQUENCIES in ‰									
36-38	15	4	12	12	7	15	10	-	13	-
39-41	50	24	40	32	40	50	40	5	13	21
42-44	46	35	52	56	60	60	100	15	50	49
45-47	63	76	36	124	33	95	90	95	154	160
48-50	85	63	76	108	107	125	160	175	183	201
51-53	129	118	108	92	87	150	230	205	154	208
54-56	146	146	124	92	133	140	120	190	158	160
57-59	144	177	108	116	140	100	100	120	108	125
60-62	98	142	164	108	120	60	90	70	50	35
63-65	77	87	84	104	107	85	40	60	46	14
66-68	75	62	84	68	60	30	10	35	42	14
69-71	44	38	12	36	27	30	10	15	17	-
72-74	13	14	52	16	40	30	-	15	-	-
75-77	15	10	24	-	7	5	-	-	-	7
78-80	-	4	20	16	20	15	-	-	-	-
81-83	-	-	4	4	-	5	-	-	-	-
84-86	2	-	-	4	-	5	-	-	-	-
87-89	-	-	-	8	7	-	-	-	4	7
90-92	-	-	-	-	7	-	-	-	8	-
93-95	-	-	-	4	-	-	-	-	-	-
Total ‰	1002	1000	1000	1000	1002	1000	1000	1000	1000	1001
Serial Nos.	14-16	14-16	19	22	22	21-23	24	25-27	26	26
No. of Samples	2	2	1	1	1	2	1	2	1	1
No. Fish Measured	485	288	250	250	150	200	100	200	240	144
Mean Length (cm)	55.8	56.8	57.7	56.2	57.4	54.7	52.3	54.5	53.2	52.8
Mean Weight (Kg)										
Tot.Wt.Landed(Tons)										
Est. No. Landed										
Mesh Size (mm)	114	114	114	114	114	114	114	114	114	114
Depth Range (m)	190	190	200	160	160	160-200	150	150	150	150

1) The age frequencies for Serial Nos. 21-23, 24, and 25-27 are given in Table 29; the age/length keys are given in Table 37.

by O. Rodriguez M.

LENGTH FREQUENCIES - COD

E 18 SPAIN - 1960

ER TRAWLERS - Commercial Catch before Discarding

Division	1B			1C	1D	1E	2H		2J			
Month	May	Aug.	Sept.	May	Sept.	May	Sept.	Oct.	Sept.	Oct.	Nov.	Dec.
cm group	FREQUENCIES in ‰											
30-32	-	-	-	-	-	-	1	-	2	1	1	-
33-35	-	10	-	11	-	1	1	-	5	3	2	-
36-38	1	28	-	5	3	24	13	2	12	5	6	-
39-41	1	51	-	3	9	121	39	4	30	22	24	18
42-44	-	56	12	4	13	224	65	8	44	29	34	63
45-47	2	45	13	22	16	166	78	8	87	58	48	107
48-50	4	34	16	45	33	66	118	47	103	100	70	94
51-53	8	34	24	35	57	36	118	90	109	124	74	98
54-56	20	58	33	44	55	17	136	132	140	158	114	111
57-59	37	59	82	87	59	48	121	163	135	147	135	127
60-62	74	101	109	84	48	43	116	218	133	154	172	147
63-65	91	99	138	128	65	57	91	144	88	94	124	101
66-68	146	84	202	189	84	69	53	84	54	46	87	69
69-71	165	92	130	124	112	48	34	50	31	31	55	34
72-74	130	81	136	95	108	34	11	25	15	13	24	18
75-77	102	70	55	39	104	20	4	12	5	7	15	4
78-80	68	45	29	40	106	13	-	6	3	3	8	5
81-83	48	24	9	20	55	7	1	4	1	1	3	1
84-86	34	16	13	3	38	4	-	-	1	-	2	-
87-89	26	7	-	14	26	1	-	2	1	1	-	-
90-92	20	3	-	6	5	1	1	-	-	1	1	2
93-95	11	1	-	3	3	-	-	-	-	1	-	-
96-98	6	-	-	-	1	1	-	-	-	1	-	-
99-101	3	-	-	-	-	-	-	-	-	-	1	-
102-104	2	-	-	-	-	-	-	-	-	-	-	-
105-107	1	-	-	-	-	-	-	-	-	-	-	-
Total ‰	1000	1000	1001	1001	1000	1000	1001	999	999	1000	1000	999
Serial Numbers	13	26	4	3	8	4	9	3	32	34	22	5
Number of Samples	4667	8206	632	735	1942	2043	3095	1377	11507	9762	7954	1610
Number Fish Measured												
Mean Length (cm)												
Mean Weight (Kg)												
Total Wt.Landed(Tons)												
Estimated No. Landed												
Mesh Size (mm)1)	160	160	160	160	160	160	160	160	160	160	160	160
Range of Depths (m)	150 -180	30 -130	35 -100	140 -160	170 -210	140 -160	40 -260	175 -180	30 -320	70 -250	170 -350	250 -310

(cont'd.)

1) Mesh Size - new, dry measure

TABLE 18 SPAIN - 1960 LENGTH FREQUENCIES - COD by O. Rodriguez M.
(cont'd.)

OTTER TRAWLERS - Commercial Catch before Discarding

Division	3K	3L		3O	3Pn	4R			4Vn			4W
Month	May	Apr.	Oct.	Apr.	Mar.	Feb.	Mar.	Apr.	Feb.	Mar.	Apr.	Mar.
3-cm group	FREQUENCIES in °/oo											
30-32	3	1	-	-	-	-	1	1	1	4	1	-
33-35	-	1	2	-	-	1	3	6	3	14	1	-
36-38	-	2	6	7	2	2	8	10	6	24	1	4
39-41	12	12	18	2	6	8	24	29	20	60	17	8
42-44	17	34	25	17	8	19	39	48	44	111	39	58
45-47	57	77	28	99	17	40	70	71	62	139	113	128
48-50	66	114	42	136	45	64	108	101	118	159	175	132
51-53	112	129	63	174	70	98	126	109	157	153	193	147
54-56	120	109	79	123	132	131	147	119	153	138	175	174
57-59	133	67	92	95	144	139	122	115	118	88	105	97
60-62	148	93	125	69	184	189	145	148	113	62	113	108
63-65	105	64	119	54	133	135	85	85	77	26	31	46
66-68	79	57	84	43	93	82	52	68	55	11	21	27
69-71	48	66	123	43	72	46	33	43	31	6	8	15
72-74	39	46	45	32	47	23	17	17	16	2	3	8
75-77	33	37	65	39	20	9	9	10	10	2	2	8
78-80	17	34	27	37	14	6	4	6	5	-	1	8
81-83	6	19	19	13	7	3	3	1	3	-	-	12
84-86	3	17	11	8	2	1	1	1	2	-	-	19
87-89	-	6	12	-	1	-	1	1	2	1	1	-
90-92	1	5	9	-	1	1	1	-	1	-	-	-
93-95	-	4	3	2	-	-	-	-	-	-	-	-
96-98	-	3	3	2	1	-	-	1	1	-	-	-
99-101	-	1	-	-	-	1	1	-	1	-	-	-
102-104	-	-	-	-	-	1	-	-	-	-	-	-
105-107	-	1	-	5	-	1	-	-	-	-	-	-
Total °/oo	999	999	1000	1000	999	1000	1000	990	999	1000	1000	999
Serial Numbers												
Number of Samples	3	18	7	1	5	6	20	9	10	6	5	1
Number Fish Measured	1222	6019	1279	464	1823	2501	7794	4120	5278	2413	2157	258
Mean Length (cm)												
Mean Weight (Kg)												
Total Wt.Landed(Tons)												
Estimated No. Landed												
Mesh Size (mm) 1)	160	160	160	160	160	160	160	160	160	160	160	160
Range of Depths (m)	290 -350	105 -215	70 -260	140 -150	160 -240	190 -250	160 -240	150 -200	180 -200	145 -220	160 -170	160 -170

1) Mesh Size - new, dry measure

TABLE 19 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 LENGTH FREQUENCIES - COD by V.I.Travin E.M. Mankevich

OTTER TRAWLERS - Exploratory Catches

Division	1C			1D		1E		1F
Month	April[1]	May[1]	June[1]	April[1]	May[1]	April	May[1]	April
3-cm group	FREQUENCIES in ‰							[1]
30-32	-	1	1	-	-	-	1	-
33-35	2	6	14	2	3	-	1	10
36-38	1	17	46	10	12	-	5	27
39-41	2	13	53	21	26	9	21	127
42-44	7	21	39	54	49	69	51	217
45-47	11	19	32	98	91	134	67	178
48-50	15	29	42	119	122	133	43	51
51-53	23	39	50	92	83	50	13	57
54-56	40	37	58	54	46	44	5	32
57-59	73	57	47	35	30	37	6	24
60-62	93	95	61	56	52	54	23	50
63-65	136	122	92	77	71	64	51	60
66-68	167	140	74	90	70	76	66	50
69-71	142	144	116	86	99	98	120	33
72-74	116	108	92	85	85	88	106	37
75-77	72	54	60	53	58	53	115	24
78-80	38	40	63	37	52	48	132	13
81-83	27	24	29	17	24	15	73	10
84-86	14	15	14	6	15	11	47	-
87-89	5	8	6	4	6	9	22	-
90-92	6	6	5	2	4	1	23	-
93-95	4	2	4	1	1	4	5	-
96-98	3	1	1	-	1	1	2	-
99-101	-	1	1	-	-	-	1	-
102-104	1	1	-	-	-	1	1	-
105-107	1	-	-	-	-	-	-	-
108-110	1	-	-	1	-	-	-	-
111-113	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	1	-	-
Total ‰	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers								
Number of Samples	26	30	9	28	46	4	15	1
Number Fish Measured	1962	4900	3546	6289	14086	798	2182	299
Mean Length (cm)	67.18	65.11	62.14	59.92	60.82	60.52	69.07	51.49
Mean Weight (Kg)	2.44	2.78	1.54	1.90	2.80	-	3.18	1.40
Total Wt Landed (Tons)								
Estimated No. Landed								
Mesh Size (mm)								
Range of Depths (fm)	82-148	36-120	33-109	33-205	22-113	87-191	44-208	77-82

[1] The age frequencies of these samples are given in Table 30; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 19 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 LENGTH FREQUENCIES - COD by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Division	2J						
Month	January	February	May[1]	June[1]	October	November[1]	December[1]
3-cm group	FREQUENCIES in °/oo						
18-20	1	-	-	2	-	-	-
21-23	2	-	3	11	-	-	-
24-26	1	-	9	32	-	1	-
27-29	-	-	9	39	2	4	-
30-32	2	1	11	41	2	6	-
33-35	3	8	15	40	6	19	3
36-38	23	11	19	38	21	25	14
39-41	19	18	25	34	33	33	22
42-44	53	49	60	47	52	53	53
45-47	48	58	85	72	68	48	43
48-50	58	73	148	104	70	76	66
51-53	82	121	158	119	132	116	103
54-56	126	147	169	136	144	132	136
57-59	165	114	122	98	147	136	127
60-62	127	126	69	71	134	145	162
63-65	131	104	55	60	101	109	124
66-68	87	70	26	33	45	45	58
69-71	28	40	9	11	20	28	46
72-74	29	29	5	5	15	14	22
75-77	4	16	2	3	2	4	4
78-80	2	6	1	2	3	3	10
81-83	2	5	-	-	-	-	3
84-86	3	1	-	-	-	-	1
87-89	1	1	-	-	-	-	1
90-92	-	-	-	-	-	-	-
93-95	1	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-
99-101	1	-	-	-	1	-	-
102-104	-	1	-	-	1	-	-
-	-	-	-	-	-	-	-
111-113	-	-	-	-	1	-	-
114-116	-	-	-	-	-	-	-
117-119	-	1	-	-	-	-	-
120-122	1	-	-	-	-	-	-
Total °/oo	1000	1000	1000	998	1000	997	998
Serial Numbers							
Number of Samples	3	2	14	26	4	77	31
Number Fish Measured	976	852	17347	5958	1044	5483	1966
Mean Length (cm)	57.27	57.21	52.12	49.35	55.37	55.13	57.35
Mean Weight (Kg)	...	...	1.35	1.50	...	2.04	1.68
Total Wt. Landed (Tons)							
Estimated No. Landed							
Mesh Size (mm)							
Range of Depths (fm)	140-192	170-181	123-253	97-266	169	77-296	134-225

[1] The age frequencies of these samples are given in Table 30; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 19 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 LENGTH FREQUENCIES - COD by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Division	3K									
Month	Jan.	Feb.[1]	March	April	May	June[1]	July	Oct.	Nov.	Dec.
3-cm group	FREQUENCIES in ‰									
15-17	-	-	-	-	1	-	-	-	-	-
18-20	-	-	2	-	3	1	5	-	-	-
21-23	3	1	1	13	21	5	15	-	2	-
24-26	7	3	2	18	9	16	15	2	3	-
27-29	6	6	2	19	1	22	25	-	6	5
30-32	5	9	4	24	-	20	54	9	10	20
33-35	9	10	4	22	-	27	49	14	13	5
36-38	14	24	8	18	2	47	20	9	17	30
39-41	11	26	16	23	1	42	40	7	23	18
42-44	28	87	54	44	19	57	35	21	32	18
45-47	29	68	58	99	19	71	43	20	29	20
48-50	89	98	111	119	69	97	30	46	37	87
51-53	110	123	124	180	146	91	88	57	65	97
54-56	125	103	109	97	159	122	44	107	102	95
57-59	139	101	65	69	169	109	54	114	114	139
60-62	77	66	69	56	132	109	35	153	159	114
63-65	84	88	58	42	115	76	68	147	182	90
66-68	72	45	80	24	73	40	20	101	84	65
69-71	36	22	38	17	21	24	35	85	62	55
72-74	58	37	38	24	28	10	35	30	31	27
75-77	16	18	47	33	3	6	25	16	13	40
78-80	27	20	23	23	5	4	40	20	7	25
81-83	19	17	30	13	1	-	35	16	3	18
84-86	15	11	8	9	1	1	35	12	1	13
87-89	12	6	10	4	1	-	35	-	1	2
90-92	1	4	9	3	-	1	35	2	-	5
93-95	3	3	6	3	1	-	15	-	1	2
96-98	-	-	1	-	-	-	5	5	-	2
99-101	1	-	2	1	-	-	15	4	-	2
102-104	1	-	3	1	-	1	-	-	-	5
105-107	-	1	4	-	-	-	20	-	-	2
108-110	-	1	2	1	-	-	5	3	-	-
111-113	-	-	-	-	-	-	5	-	-	-
>113[2]	-	-	11	1	-	1	20	-	-	-
Total ‰	997	998	1000	1000	1000	1000	1000	1000	997	1001
Serial Numbers										
Number of Samples	6	16	5	9	1	7	6	7	16	3
Number Fish Measured	1488	1617	1005	782	921	1604	202	564	4624	402
Mean Length (cm)	59.03	56.09	59.92	53.48	56.90	52.11	61.38	61.13	58.52	59.41
Mean Weight (Kg)	...	1.64	...	...	...	1.68	...	...	...	...
Total Wt.Landed(Tons)										
Estimated No. Landed										
Mesh Size (mm)										
Range of Depths (fm)	148 -176	151 -192	159 -187	134 -228	137	90 -217	178 -244	128	87 -134	159

[1] The age frequencies of these samples are given in Table 30; the age/length frequencies are given in Table 38. [2] For breakdown, see end of table.

(cont'd.)

TABLE 19 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 LENGTH FREQUENCIES - COD by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Division	3L						3M				
Month	Jan.	March	April	July	Aug.	Dec.	Jan.	March[1]	April	July[1]	Dec.
3-cm group	FREQUENCIES in ‰										
9-11	-	-	-	1	-	-	-	-	-	-	-
12-14	-	-	-	-	-	-	-	-	-	-	-
15-17	-	-	-	2	-	-	-	-	-	-	-
18-20	-	40	5	1	-	-	-	-	77	-	-
21-23	-	40	10	6	-	-	-	3	-	2	-
24-26	-	-	22	7	-	1	-	2	-	14	-
27-29	-	40	29	20	-	2	3	5	26	19	-
30-32	-	40	24	20	-	6	7	6	51	19	-
33-35	-	-	29	24	-	11	13	9	51	27	4
36-38	-	-	12	28	-	20	13	8	26	45	11
39-41	-	-	46	20	-	22	20	17	51	33	59
42-44	-	40	41	28	-	25	28	21	-	29	38
45-47	-	40	102	44	-	47	33	42	26	52	67
48-50	-	40	150	69	-	67	123	114	205	88	85
51-53	-	-	119	63	16	124	194	209	178	126	169
54-56	-	-	131	74	47	111	219	169	103	192	158
57-59	-	-	90	68	21	120	120	125	77	149	192
60-62	-	-	36	56	26	142	131	94	26	92	135
63-65	-	40	32	64	42	79	55	56	77	62	44
66-68	100	-	14	51	37	38	20	38	-	26	21
69-71	200	-	14	53	84	21	10	24	-	7	11
72-74	100	-	14	30	105	23	5	17	26	4	-
75-77	-	80	22	36	142	17	3	8	-	5	4
78-80	100	240	22	27	122	23	-	6	-	1	-
81-83	-	80	10	17	68	19	-	4	-	-	2
84-86	100	40	5	22	53	17	-	7	-	2	-
87-89	-	40	2	24	42	11	3	1	-	1	-
90-92	100	80	5	24	26	16	-	1	-	1	-
93-95	100	40	5	22	58	5	-	1	-	1	-
96-98	100	40	5	24	47	10	-	2	-	1	-
99-101	-	-	-	15	11	7	-	2	-	1	-
102-104	-	-	-	12	11	-	-	1	-	-	-
>104[2]	100	40	4	48	42	16	-	8	-	-	-
Total ‰	1000	1000	1000	1000	1000	1000	1000	1000	1000	999	1000
Serial Numbers											
Number of Samples	1	3	11	24	1	6	3	20	2	41	1
Number Fish Measured	10	25	413	1355	190	1221	1786	39	1675	526	4423
Mean Length (cm)	83.80	67.12	51.98	63.98	78.40	60.19	54.27	56.07	47.55	52.39	54.09
Mean Weight (Kg)	...	...	...	...	...	...	...	...	...	1.50	...
Total Wt.Landed(Tons)											
Estimated No. Landed											
Mesh Size (mm)											
Range of Depths (fm)	197 -198	57-	85 -211	84 -213	181 -233	151 -241	164 -263	125 -236	153 -170	94 -283	178 -197

[1] The age frequencies of these samples are given in Table 30; the age/length frequencies are given in Table 38. [2] For breakdown, see end of table.

(cont'd.)

by V.I.Travin

LENGTH FREQUENCIES - COD

ABLE 19 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

TTER TRAWLERS - Exploratory Catches

Division	3N									
Month	Jan.	March	April	June	July[1]	Aug.	Sept.[1]	Oct.	Nov.	Dec.
3-cm group	FREQUENCIES in ‰									
12-14	–	–	–	–	7	–	–	–	–	–
15-17	–	2	–	–	39	–	–	–	–	–
18-20	–	16	1	–	120	25	–	–	–	–
21-23	–	23	3	–	242	20	–	4	3	–
24-26	–	23	1	–	140	103	–	23	31	–
27-29	36	30	4	–	55	113	10	53	79	–
30-32	71	56	10	–	11	49	10	32	57	–
33-35	134	53	27	–	7	20	10	76	46	–
36-38	128	60	37	–	13	49	10	91	28	22
39-41	77	38	55	–	22	38	22	99	26	15
42-44	77	61	139	26	9	38	28	106	52	7
45-47	92	61	110	48	20	59	45	80	31	–
48-50	119	90	131	103	17	69	145	144	58	30
51-53	107	84	93	132	24	84	152	136	78	22
54-56	46	58	88	141	24	99	230	68	46	74
57-59	20	29	58	166	17	84	155	64	55	37
60-62	10	23	29	147	20	10	101	4	31	52
63-65	5	15	31	140	28	20	32	8	13	37
66-68	10	15	20	44	13	15	20	3	16	22
69-71	5	29	35	23	22	20	4	3	6	15
72-74	5	26	33	5	24	20	12	–	13	37
75-77	–	35	36	10	17	30	4	–	18	81
78-80	5	33	31	11	4	–	6	–	21	22
81-83	15	23	9	3	11	5	–	–	16	30
84-86	–	30	10	1	2	10	2	–	23	37
87-89	5	30	3	–	17	15	2	–	16	37
90-92	–	16	4	–	15	5	2	–	28	30
93-95	–	18	1	–	7	–	2	–	31	52
96-98	–	9	–	–	11	–	–	3	10	68
99-101	–	6	1	–	7	–	–	3	31	30
102-104	10	1	–	–	–	–	–	–	28	30
105-107	10	3	–	–	7	–	4	–	106	213
>107[2]	15	4	–	–	28	–	2	–	1000	1000
Total ‰	1000	1000	1000	1000	1000	1000	1000	1000		
Serial Numbers	4	13	3	1	4	8	10	3	4	1
Number of Samples	196	1352	1631	728	458	203	502	264	385	135
Number Fish Measured	46.25	53.62	52.96	57.43	40.06	45.67	47.20	47.63	64.82	84.80
Mean Length (cm)	...	...	...	...	...	...	1.66	...	...	...
Mean Weight (Kg)										
Total Wt Landed (Tons)										
Estimated No. Landed										
Mesh Size (mm)				...	111	20	22	68	35	179
Range of Depths (fm)	22 -115	65 -115	60 -98		-198	-100	-31	-219	-178	-307

1)The age frequencies of these samples are given in Table 30; the age/length frequencies are given in Table 38. 2)For breakdown, see end of table.

(cont'd.)

TABLE 19 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 LENGTH FREQUENCIES - COD by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Division	3O						3P			
Month	Jan.	Feb.	March	June	Aug.	Nov.	Jan.[1]	Feb.[1]	March	Aug.
3-cm group	FREQUENCIES in ‰									
18-20	-	-	-	-	-	-	-	2	-	-
21-23	-	-	-	-	-	-	-	2	6	-
24-26	-	-	-	-	-	-	-	3	11	-
27-29	-	-	-	-	16	-	-	10	22	33
30-32	1	-	-	55	-	-	1	39	17	33
33-35	3	-	-	27	8	-	11	56	6	67
36-38	7	-	56	-	16	-	25	60	45	100
39-41	19	-	-	96	24	-	44	124	110	133
42-44	63	-	-	96	8	-	121	144	158	33
45-47	120	-	111	150	65	-	153	182	246	-
48-50	170	-	166	96	106	-	158	138	136	133
51-53	165	-	111	274	122	-	175	74	73	133
54-56	156	500	56	96	98	46	121	68	51	67
57-59	95	-	56	27	98	46	46	24	11	67
60-62	55	-	-	-	81	91	37	9	17	34
63-65	36	-	-	-	49	227	27	12	6	-
66-68	34	-	56	14	49	227	17	9	8	-
69-71	25	-	-	-	24	91	22	10	6	68
72-74	24	-	56	14	41	-	16	9	6	33
75-77	9	-	-	-	24	91	7	3	14	33
78-80	7	-	-	-	49	-	8	9	8	-
81-83	4	-	-	-	8	46	4	5	14	33
84-86	2	-	56	27	41	45	2	-	6	-
87-89	2	-	-	14	8	-	3	2	8	-
90-92	2	-	56	-	8	-	1	2	3	-
93-95	-	-	55	-	8	-	-	-	3	-
96-98	-	500	55	-	-	-	-	-	3	-
99-101	-	-	55	-	16	-	-	-	3	-
102-104	-	-	55	-	8	45	-	2	3	-
105-107	-	-	-	-	-	-	-	2	-	-
108-110	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	45	-	-	-	-
114-116	-	-	-	14	-	-	-	-	-	-
>116[2]	-	-	-	-	25	-	-	-	-	-
Total ‰	999	1000	1000	1000	1000	1000	999	1000	1000	1000
Serial Numbers										
Number of Samples	7	1	8	1	5	1	8	9	4	1
Number Fish Measured	3285	2	18	73	123	22	2433	571	354	30
Mean Length (cm)	53.97	76.00	66.81	50.38	61.82	71.04	51.40	46.30	48.16	50.13
Mean Weight (Kg)	...	...	...	...	...	...	1.49	0.87	...	...
Total Wt Landed (Tons)										
Estimated No. Landed										
Mesh Size (mm)										
Range of Depths (fm)	52 -101	43-49	49 -175	51	41 -109	164 -186	84 -159	57 -185	54-96	61-64

[1] The age frequencies of these samples are given in Table 30; the age/length frequencies are given in Table 38. [2] For breakdown, see end of table.

(cont'd.)

TABLE 19 (cont'd.) UNION OF SOVIET SOCIALIST REPUBLICS - 1960 LENGTH FREQUENCIES - COD SUPPLEMENTARY BREAKDOWN by V.I.Travin

OTTER TRAWLERS - Exploratory Catches

3K Breakdown of ">113" frequencies:

March: 117-119 (1), 120-122 (3), 123-125 (7)
April: 129-131 (1)
June: 123-125 (1)
July: 114-116 (5), 117-119 (5), 129-131 (5), 135-137 (5)

3L Breakdown of ">104" frequencies:

January: 108-110 (100)
March: 108-110 (40)
April: 105-107 (2), 114-116 (2)
July: 105-107 (15), 108-110 (8), 111-113 (5), 114-116 (4), 117-119 (3), 120-122 (4), 123-125 (3), 126-128 (1), 132-134 (4), 138-140 (1)
August: 105-107 (16), 108-110 (5), 111-113 (11), 114-116 (5), 120-122 (5)
December: 105-107 (2), 108-110 (5), 111-113 (3), 114-116 (3), 120-122 (1) 123-125 (1), 126-128 (1)

3M Breakdown of ">104" frequencies:

March: 105-107 (1), 108-110 (1), 111-113 (1), 114-116 (1), 123-125 (1), 126-128 (1), 129-131 (1), 132-134 (1)

3N Breakdown of ">107" frequencies:

January: 108-110 (5), 111-113 (10)
March: 108-110 (2), 117-119 (1), 123-125 (1)
July: 108-110 (12), 111-113 (4), 114-116 (4), 117-119 (4), 123-125 (4)
September: 111-113 (2)
November: 108-110 (36), 111-113 (21), 114-116 (28), 117-119 (6), 120-122 (9), 129-131 (6)
December: 108-110 (81), 111-113 (44), 114-116 (44), 117-119 (30), 120-122 (7) 123-125 (7)

3O Breakdown of ">116" frequencies:

August: 120-122 (8), 126-128 (17)

TABLE 20 UNITED KINGDOM - 1960 LENGTH FREQUENCIES - COD

by C.E.Lucas
R.J.H.Beverton

OTTER TRAWLERS - Commercial Catches

Location	Subarea 1	
3-cm group	No. per 100 Hours Fishing	‰
33-35	100	2
36-38	88	1
39-41	1039	17
42-44	3709	62
45-47	8089	136
48-50	11160	187
51-53	9015	151
54-56	4758	80
57-59	2874	48
60-62	2000	34
63-65	2485	42
66-68	3024	51
69-71	2846	48
72-74	2573	43
75-77	1822	31
78-80	1615	27
81-83	883	15
84-86	564	9
87-89	513	9
90-92	115	2
93-95	182	3
96-98	16	-
99-101	11	-
102-104	49	1
105-107	-	-
108-110	6	-
>110	6	-
Total	59542	999
Number Fish Measured	7500	
Mean Length (cm)	56.5	

TABLE 21 UNITED KINGDOM - 1960 LENGTH FREQUENCIES - COD[1] by G.C.Trout

OTTER TRAWLERS - Commercial Catches

Division	3L - Le Grand Nord							
Month	January							
Length Group (cm)	Fish Measured				Raised to Total Catch			
	Medium		Small		Medium	Small	Medium and Small	
	Nos.	°/oo	Nos.	°/oo			Nos.	°/oo
	FREQUENCIES in °/oo							
39-41	-	-	17	39	-	442	442	12
42-44	-	-	23	53	-	598	598	17
45-47	-	-	82	189	-	2132	2132	59
48-50	2	5	95	219	121	2470	2591	72
51-53	5	12	119	275	303	3094	3397	94
54-56	22	53	62	143	1332	1612	2944	81
57-59	31	75	33	76	1877	858	2735	75
60-62	64	156	2	5	3875	52	3927	108
63-65	67	163	-	-	4057	-	4057	112
66-68	73	177	-	-	4420	-	4420	122
69-71	52	126	-	-	3149	-	3149	87
72-74	41	100	-	-	2483	-	2483	69
75-77	19	46	-	-	1150	-	1150	32
78-80	16	39	-	-	969	-	969	27
81-83	9	22	-	-	545	-	545	15
84-86	5	12	-	-	303	-	202	8
87-89	3	7	-	-	182	-	182	5
90-92	1	2	-	-	61	-	61	2
93-95	1	2	-	-	61	-	61	2
96-98	1	2	-	-	61	-	61	2
Total	412	999	433	999	24949	11258	36207	1001
No. of Kits[2]	13		6					
Total No. of Kits					787.2	156.		
Raising Factors					60.55	26.		

[1] Abstracted from "Cod Sampling on board a factory stern trawler" by G.C.Trout, Fisheries Laboratory, Lowestoft, U.K. - 1960.

[2] One kit is 10 stone or 140 lbs or approx. 63.5 kilos.

(cont'd.)

SAMPLE DATA

Number Measured	845
Mean Length (cm)	61.6
Mean Weight (Kg)	1.6
Total Wt. Landed (Tons)	59
Estimated No. Landed	36207
Mesh Size (mm)	112-114

TABLE 21 UNITED KINGDOM - 1960 LENGTH FREQUENCIES - COD[1] by G.C.Trout
(cont'd.)

OTTER TRAWLERS - Commercial Catches

Division	3P - The Gullies										
Month	January/February										
Length Group (cm)	Fish Measured[5]						Raised to Total Catch				
	Medium		Small[3]		Small[4]		Medium	Small	Small	Medium and Small	
	Nos.	‰	Nos.	‰	Nos.	‰				Nos.	‰
	FREQUENCIES in ‰										
33-35	-	-	1	1	-	-	-	182	-	182	1
36-38	-	-	2	2	-	-	-	363	-	363	1
39-41	-	-	13	16	2	9	-	2360	665	3025	10
42-44	-	-	19	23	2	9	-	3449	665	4114	13
45-47	-	-	139	171	28	131	-	25229	9316	34545	110
48-50	3	3	171	210	38	178	292	31037	12643	43972	140
51-53	10	10	237	292	58	271	973	43016	19297	63286	201
54-56	59	60	137	169	42	196	5742	24866	13973	44581	142
57-59	83	84	88	108	35	164	8078	15972	11645	35695	113
60-62	137	140	4	5	5	23	13333	726	1664	15723	50
63-65	148	150	2	2	4	19	14404	363	1331	16098	51
66-68	170	172	-	-	-	-	16545	-	-	16545	53
69-71	119	121	-	-	-	-	11582	-	-	11582	37
72-74	92	93	-	-	-	-	8954	-	-	8954	28
75-77	65	66	-	-	-	-	6326	-	-	6326	20
78-80	52	53	-	-	-	-	5061	-	-	5061	16
81-83	27	27	-	-	-	-	2628	-	-	2628	8
84-86	13	13	-	-	-	-	1265	-	-	1265	4
87-89	7	7	-	-	-	-	681	-	-	681	2
90-92	1	1	-	-	-	-	97	-	-	97	-
Total	986	1000	813	999	214	1000	95961	147563	71199	314723	1000
No. of Kits[2]	29		11		3						
Total No. of Kits							2822.4	2995.2			
Raising Factors							97.324	181.5	332.7		

[1] Abstracted from "Cod Sampling on board a Factory Stern Trawler" by G.C.Trout, Fisheries Laboratory, Lowestoft, U.K. - 1960.

[2] One kit is 10 stone or 140 lbs or approx. 63.5 kilos.

[3] Machine No. 38; [4] Machine No.338. [5] The 1:2 ratio is considered the most probable, as indicated in Column C of Table 3A of report noted in (1) above.

SAMPLE DATA

Number Measured	
Mean Length (cm)	56.3
Mean Weight (Kg)	
Total Wt. Landed (Tons)	
Estimated No. Landed	314723
Mesh Size (mm)	112-114

COMMERCIAL

Month												
3-cm group												
<42 1)	–	–	5	3	–	8	11	106	76	64	174	204
42-44	–	–	10	19	–	29	22	141	101	106	104	193
45-47	29	11	16	70	12	39	79	71	139	70	150	136
48-50	87	55	55	99	47	66	79	269	135	107	124	39
51-53	150	97	81	101	96	105	158	94	90	44	122	64
54-56	133	124	134	73	119	95	90	71	96	75	80	22
57-59	143	194	184	141	155	93	46	47	95	89	43	11
60-62	142	146	142	121	119	107	68	47	70	49	14	7
63-65	107	135	103	94	47	121	68	59	25	67	4	–
66-68	54	146	83	109	35	33	68	12	31	41	–	4
69-71	56	27	93	79	71	63	45	24	38	28	–	–
72-74	56	38	24	52	84	39	44	–	21	43	–	11
75-77	9	27	16	7	48	31	78	–	20	18	–	–
78-80	8	–	8	6	35	25	–	–	8	48	–	4
81-83	8	–	4	5	12	43	45	–	2	6	–	4
84-86	4	–	4	1	12	6	11	–	14	37	–	–
87-89	3	–	3	7	24	28	22	–	4	16	–	4
90-92	–	–	2	–	12	23	22	–	3	–	–	–
93-95	–	–	3	6	–	11	11	–	–	–	–	4
96-98	3	–	5	4	12	8	11	–	–	20	–	8
99-101	2	–	7	–	36	–	–	–	3	–	–	
102-104	2	–	–	2	–	25	11	–	7			
105-107	1	–	1	–	12	–	11	–				
108-110	3	–	1	1	12							
>110 1)	–	–										
Total ‰	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers	9	2	9	7	5	7	3	1	8	6	2	3
Number of Samples	413	111	394	293	84	275	89	66	399	272	208	189
Number Fish Measured	2.5	2.5	2.6	2.8	3.5	3.9	3.7	2.7	3.0	3.9	2.2	2.4
Mean Weight (Kg)	189.78	106.26	144.51	179.77	176.51	255.66	181.79	54.17	66.34	125.61	262.66	227.70
Total Wt Landed (Tons)	0.076	0.042	0.056	0.065	0.050	0.065	0.049	0.020	0.022	0.032	0.120	0.096
Est. No. (Millions)	40-100	50-90	50-105	30-120	75-120	20-115	35-120	55-85	40-100	58-100	28-90	42-95

1) <42: Mar. 36-38(1), 39-41(4). >110: Mar. 111-113(1); Apr. 114-116(1); May 111-113(12); July 132-134(11); Sept. 114-116(4), 117-119(3); Dec. 111-113(4), 114-116(4).

(cont'd.)

TABLE 22 UNITED STATES - 1960 (cont'd.) LENGTH FREQUENCIES - COD by H.E.Murray

COMMERCIAL OTTER TRAWLERS Division 5Z

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
3-cm group	FREQUENCIES in ‰											
24-26	-	-	-	1	-	-	-	-	-	-	-	-
27-29	-	-	-	1	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
36-38	-	-	1	-	3	-	-	-	-	-	-	-
39-41	-	-	4	1	15	9	8	3	-	6	5	78
42-44	26	2	6	8	69	54	31	21	10	42	42	216
45-47	54	17	4	14	106	107	94	168	61	122	172	240
48-50	54	39	19	14	85	85	135	162	103	228	209	86
51-53	106	87	38	30	57	41	93	169	128	162	105	121
54-56	172	183	47	81	46	29	83	83	116	75	44	104
57-59	210	130	64	94	58	43	89	64	122	65	22	33
60-62	104	103	79	109	110	109	149	85	139	66	81	24
63-65	84	76	86	141	133	86	114	58	114	58	67	24
66-68	106	79	99	114	123	74	73	55	72	64	67	18
69-71	48	122	103	110	84	51	52	58	69	46	52	7
72-74	8	87	87	161	71	92	34	60	39	22	63	28
75-77	9	47	73	65	25	94	31	13	22	19	38	6
78-80	7	14	47	39	10	57	14	1	2	21	19	15
81-83	-	14	107	14	5	46	-	-	2	2	12	-
84-86	4	-	4	3	-	23	-	-	-	2	2	-
87-89	4	-	61	-	-	-	-	-	1	-	-	-
90-92	4	-	15	-	-	-	-	-	-	-	-	-
93-95	-	-	45	-	-	-	-	-	-	-	-	-
96-98	-	-	11	-	-	-	-	-	-	-	-	-
Total ‰	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers												
Number of Samples	4	3	7	7	6	4	4	4	4	4	6	3
Number Fish Measured	387	394	588	505	521	467	476	443	400	397	447	213
Mean Length (cm)												
Mean Weight (Kg)	2.4	2.8	4.2	3.2	2.5	3.0	2.3	2.1	2.4	2.1	2.3	1.6
Total Wt.Landed(Tons)	381.57	530.32	796.95	1005.51	924.61	991.22	923.68	864.56	866.50	1024.28	779.62	779.51
Est. No. (Millions)	0.161	0.190	0.192	0.312	0.372	0.329	0.397	0.413	0.361	0.490	0.343	0.497
Mesh Size												
Range of Depths (fm)	18-140	30-110	10-50	12-52	15-37	30-45	27-50	28-100	14-105	22-140	15-128	18-38

TABLE 23 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
by sexes, with mean length at each age

West Greenland (Banks) - Research Catches

Location		1B - Stora Hellefiske Bank 66°40'N, 54°25'W											
Gear		Handline						Longline					
Month		July											
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	20	32	52	43.4	40.9	41.8	3	-	3	42.0	-	42.0
1956	4	95	67	162	53.6	52.4	53.1	10	21	31	51.3	50.0	50.4
1955	5	166	126	292	61.0	60.5	60.8	113	100	213	60.1	61.1	60.6
1954	6	36	63	99	64.3	67.9	66.6	41	55	96	63.8	67.6	66.0
1953	7	170	130	300	70.3	74.1	71.9	107	189	296	70.6	71.5	71.2
1952	8	24	20	44	74.0	75.4	74.6	38	34	72	74.3	75.7	75.0
1951	9	-	16	16	-	77.3	77.3	14	10	24	76.3	76.0	76.1
1950	10	12	12	24	80.0	83.7	81.8	31	34	65	75.8	81.2	78.6
1949	11	-	-	-	-	-	-	-	3	3	-	80.0	80.0
1948	12	-	-	-	-	-	-	3	10	13	79.0	90.0	87.3
1947	13	4	4	8	81.0	92.0	86.5	58	45	103	83.1	89.8	86.0
1946	14	-	-	-	-	-	-	-	10	10	-	90.0	90.0
1945	15	4	-	4	87.0	-	87.0	14	14	28	80.5	86.0	83.3
1944	16	-	-	-	-	-	-	10	7	17	89.7	94.5	91.6
1943	17	-	-	-	-	-	-	-	3	3	-	95.0	95.0
1942	18	-	-	-	-	-	-	7	10	17	86.5	100.0	94.6
1941	19	-	-	-	-	-	-	-	3	3	-	96.0	96.0
Total ‰		531	470	1001				449	548	997			
Serial Numbers			1						1a				
Number of Samples													
Number of Fish Aged		134	119	253				131	160	291			
Mean Age			5.9						8.1				
Mean Weight (Kg)			...						3.9				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)		ca. 50						45-135					

1) The length frequencies of these samples are given in Table 10; the age/length keys are given in Table 31.

(cont'd.)

TABLE 23 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1)] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Banks) - Research Catches

Location		1C - Lille Hellefiske Bank 65°06'N, 54°02'W											
Gear		Handline						Longline					
Month		July											
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1955	5	9	5	14	61.0	67.0	63.0	23	15	38	62.5	64.0	63.1
1954	6	41	27	68	69.6	71.7	70.4	23	15	38	68.2	70.5	69.1
1953	7	159	109	268	74.0	76.6	75.1	87	95	182	72.0	76.0	74.1
1952	8	50	45	95	78.5	76.5	77.4	42	23	65	74.7	80.0	76.6
1951	9	36	45	81	77.8	82.3	80.3	30	30	60	76.3	82.3	79.3
1950	10	114	86	200	80.5	82.8	81.5	53	83	136	77.6	82.5	80.6
1949	11	9	9	18	82.5	98.5	90.5	4	-	4	78.0	-	78.0
1948	12	27	9	36	82.8	90.0	84.6	19	34	53	84.4	85.1	84.9
1947	13	95	64	159	81.4	85.7	83.1	133	163	296	82.0	83.9	83.1
1946	14	-	5	5	-	94.0	94.0	11	19	30	79.3	85.0	82.9
1945	15	27	-	27	87.0	-	87.0	19	15	34	85.8	87.3	86.4
1944	16	-	-	-	-	-	-	8	11	19	82.5	89.7	86.8
1943	17	5	-	5	83.0	-	83.0	11	4	15	86.7	89.0	87.3
1942	18	9	9	18	89.0	93.5	91.3	19	4	23	88.6	94.0	89.5
1941	19	-	-	-	-	-	-	-	4	4	-	97.0	97.0
1940	20	-	-	-	-	-	-	-	-	-	-	93.0	93.0
Total ‰		581	413	994				482	515	997			
Serial Numbers			2						2a				
Number of Samples													
Number of Fish Aged		128	91	220				127	137	264			
Mean Age			9.5						10.7				
Mean Weight (Kg)			...						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)													

1) The length frequencies of these samples are given in Table 10 ; the age/length keys are given in Table 31.

(cont'd.)

by sexes, with mean length at each age

Greenland (Banks) - Research Catches														
cation	1C - Lille Hellefiske Bank 65°07'N, 53°15'W													
ar	Handline						Longline							
nth	July													
ear-	‰ Frequency			Mean Length			‰ Frequency			Mean Length		
ass Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
957 3	-	-	-	-	-	-	6	-	6	42.0	-	42.0
956 4	16	5	21	50.7	55.0	51.8	6	-	6	50.0	-	50.0
955 5	26	41	67	61.6	61.8	61.7	12	37	49	62.5	62.7	62.6
954 6	47	52	99	66.2	69.8	68.1	37	25	62	64.7	69.3	66.5
953 7	176	181	363	75.2	74.5	74.8	117	86	203	73.4	74.7	73.9
952 8	41	41	82	79.6	81.1	80.5	12	55	67	78.0	79.3	79.1
951 9	36	36	78	80.0	82.4	81.1	25	37	62	80.3	81.7	81.1
950 10	73	78	151	77.6	81.9	79.8	49	104	153	79.4	85.1	83.2
949 11	5	-	5	76.0	-	76.0	-	6	6	-	83.0	83.0
948 12	-	10	10	-	80.0	80.0	31	12	43	83.4	85.0	83.9
947 13	41	67	108	80.4	84.6	83.0	80	135	215	84.1	86.6	85.7
946 14	-	-	-	-	-	-	12	37	49	79.5	90.7	87.9
945 15	5	-	5	98.0	-	98.0	-	43	43	-	94.9	94.9
944 16	-	-	-	-	-	-	-	6	6	-	102.0	102.0
943 17	-	-	-	-	-	-	12	-	12	93.0	-	93.0
942 18	-	5	5	-	97.0	97.0	-	6	6	-	92.0	92.0
941 19	5	-	5	88.0	-	88.0	-	6	6	-	118.0	118.0
940 20	-	-	-	-	-	-	-	6	6	-	125.0	125.0
Total ‰	471	516	999				399	601	1000			
Serial Numbers		3						3a				
Number of Samples	92	100	193*				65	98	163			
Number of Fish Aged		...						10.1				
Mean Age		...						...				
Mean Weight (Kg)												
Total Wt.Landed(Tons)												
Estimated No. Landed												
Hook Size								80-130				
Range of Depths (m)		...										

1) The length frequencies of these samples are given in Table 10 ; the age/length keys are given in Table 31.

* one specimen not sexed

(cont'd.)

TABLE 23 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Banks) - Research Catches

Location		1C - Banana Bank 64°25'N, 53°13'W											
Gear		Handline						Longline					
Month		July											
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	35	21	56	41.4	42.0	41.6	10	10	20	42.5	42.0	42.3
1956	4	77	21	98	52.0	48.7	51.3	14	19	33	51.7	53.0	52.4
1955	5	63	35	98	60.4	59.8	60.2	58	53	111	59.4	59.2	59.3
1954	6	28	35	63	67.8	65.0	66.2	43	48	91	66.3	66.6	66.5
1953	7	127	120	247	76.0	75.8	75.9	121	135	256	72.5	77.2	75.0
1952	8	28	28	56	78.5	82.8	80.5	34	19	53	76.9	81.0	78.4
1951	9	42	7	49	82.5	81.0	82.3	34	19	53	81.0	77.8	78.8
1950	10	56	77	133	85.6	84.2	84.8	48	63	116*	85.0	84.2	84.4
1949	11	7	7	14	86.0	88.0	87.0	5	10	15	86.0	86.5	86.3
1948	12	14	14	28	89.5	89.5	89.5	14	14	28	80.3	89.3	84.8
1947	13	49	70	119	85.0	92.6	89.5	87	92	184*	87.2	90.6	89.3
1946	14	-	-	-	-	-	-	-	10	10	-	84.0	84.0
1945	15	7	7	14	85.0	87.0	86.0	5	10	15	90.0	98.0	95.3
1944	16	-	14	14	-	91.0	91.0	-	-	-	-	-	-
1943	17	-	-	-	-	-	-	-	10	10	-	91.5	91.5
1942	18	-	7	7	-	85.0	85.0	5	-	5	82.0	-	92.0
Total ‰		533	463	996				478	512	1000			
Serial Numbers			4						4a				
Number of Samples													
Number of Fish Aged		76	66	142				99	106	207**			
Mean Age			8.0						8.7				
Mean Weight (Kg)			...						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			...						60-100				

1) The length frequencies of these samples are given in Table 10; the age/length keys are given in Table 31.

* one specimen not sexed

** two specimens not sexed

(cont'd.)

TABLE 23 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean lengths at each age

West Greenland (Banks) - Research Catches

Location		1D - Fylla Bank											
		63°58'N, 53°28'W						64°01'N, 52°26'W					
Gear		Longline											
Month		April						July					
Year-		°/oo Frequency			Mean Length			°/oo Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	-	-	-	-	-	-	-	8	8	-	41.0	41.0
1956	4	-	-	-	-	-	-	23	8	31	59.7	54.0	58.3
1955	5	11	-	11	57.5	-	57.5	38	38	76	63.8	62.0	62.9
1954	6	34	23	57	63.2	62.8	63.0	31	38	69	66.3	68.6	67.6
1953	7	280	377	657	67.9	71.1	69.7	146	131	277	71.7	74.4	73.0
1952	8	40	40	80	73.0	77.0	75.0	-	38	38	-	76.8	76.8
1951	9	17	17	34	72.7	79.0	75.8	8	23	31	74.0	73.7	73.8
1950	10	34	34	68	80.0	81.7	80.8	62	38	100	85.0	84.2	84.7
1949	11	-	-	-	-	-	-	23	-	23	86.0	-	86.0
1948	12	6	6	12	85.0	83.0	84.0	23	31	54	73.7	81.5	78.1
1947	13	17	40	57	81.3	82.7	82.3	22	25	47	78.6	82.2	80.5
1946	14	6	6	12	88.0	80.0	84.0	15	-	15	79.2	-	79.5
1945	15	-	6	6	-	81.0	81.0	-	31	31	-	88.0	88.0
1944	16	-	-	-	-	-	-	-	-	-	-	-	-
1943	17	-	-	-	-	-	-	8	-	8	86.0	-	86.0
1942	18	-	-	-	-	-	-	23	15	38	89.3	100.0	93.6
1940	19	-	-	-	-	-	-	8	-	8	72.0	-	72.0
-		-	-	-	-	-	-	-	-	-	-	-	-
1934	26	-	6	6	-	98.0	98.0	-	-	-	-	-	-
Total °/oo		445	555	1000				493	507	1000			
Serial Numbers			6						8a				
Number of Samples													
Number of Fish Aged		78	97	175				64	66	130			
Mean Age			7.9						9.5				
Mean Weight (Kg)			3.2						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)		85-150						150					

1) The length frequencies of these samples are given in Table 10; the age/length keys are given in Table 31.

(cont'd.)

TABLE 23 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Banks) - Research Catches

Location		1D - Fylla Bank						1D - Fiskenaes Bank					
		63°41'N, 52°24'W						63°28'N, 52°08'W					
Gear		Longline						Handline					
Month		July											
Year-Class	Age	‰ Frequency			Mean Length			‰ Frequency			Mean Length		
		♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	-	8	8	-	52.0	52.0	-	-	-	-	-	-
1955	5	-	-	-	-	-	-	-	10	10	-	58.0	58.0
1954	6	8	16	24	68.0	67.5	67.7	59	59	118	69.0	68.0	68.5
1953	7	98	98	196	73.1	73.2	73.2	238	129	367	74.3	75.9	74.9
1952	8	8	8	16	68.0	68.0	68.0	79	40	119	78.6	79.3	78.8
1951	9	16	16	32	82.5	79.5	81.0	30	89	119	85.7	85.9	85.8
1950	10	90	74	164	79.1	85.4	81.8	59	79	149*	86.3	83.5	84.8
1949	11	-	-	-	-	-	-	-	20	20	-	79.5	79.5
1948	12	33	49	82	80.8	82.8	82.0	20	10	30	85.0	85.0	85.0
1947	13	131	148	279	81.3	85.9	83.8	40	30	70	94.0	87.7	91.3
1946	14	16	16	32	79.5	83.5	81.5	-	-	-	-	-	-
1945	15	33	8	41	91.0	101.0	93.0	-	-	-	-	-	-
1944	16	-	16	16	-	87.0	87.0	-	-	-	-	-	-
1943	17	16	16	32	83.5	72.5	78.0	-	-	-	-	-	-
1942	18	41	25	66	82.6	99.0	88.8	-	-	-	-	-	-
1941	19	-	-	-	-	-	-	-	-	-	-	-	-
1940	20	8	-	8	73.0	-	73.0	-	-	-	-	-	-
Total ‰		498	498	996				525	466	1002			
Serial Numbers			9						10				
Number of Samples													
Number of Fish Aged		61	61	122				53	47	101*			
Mean Age			11.5						8.3				
Mean Weight (Kg)			...						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			70-100										

1) The length frequencies of these samples are given in Table 10 ; the age/length keys are given in Table 31.

* one specimen not sexed

(cont'd.)

TABLE 23 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1)] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Banks) - Research Catches

Location		1D - Fiskenaes Bank						1D - Dana Bank					
		63°28'N, 52°08'W						62°49'N, 51°09'W					
Gear		Longline						Handline					
Month		July						August					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	-	-	-	-	-	-	11	16	27	53.0	51.3	52.0
1955	5	29	14	43	65.5	62.0	64.3	5	5	10	59.0	60.0	59.5
1954	6	21	36	57	67.7	69.6	68.9	11	16	27	68.0	69.7	69.0
1953	7	93	71	164	73.8	73.4	73.6	102	112	214	72.5	76.9	74.8
1952	8	43	43	86	79.0	76.0	77.5	64	27	91	76.1	77.8	76.6
1951	9	29	36	65	82.3	84.2	83.3	48	48	96	81.0	82.1	81.6
1950	10	93	100	193	83.5	88.4	85.4	118	102	225*	80.1	86.7	83.3
1949	11	14	14	28	81.5	83.0	82.3	11	5	16	82.0	99.0	87.7
1948	12	50	64	114	87.3	86.8	87.0	16	11	27	89.7	87.0	88.6
1947	13	107	64	171	88.7	93.7	90.6	118	80	198	82.2	83.9	82.9
1946	14	7	7	14	89.0	97.0	93.0	16	11	27	83.3	77.0	80.8
1945	15	21	7	28	98.0	88.0	95.5	21	21	42	84.5	88.5	86.5
1944	16	-	-	-	-	-	-	-	-	-	-	-	-
1943	17	-	-	-	-	-	-	-	-	-	-	-	-
1942	18	7	21	28	99.0	103.0	102.0	-	-	-	-	-	-
1941	19	-	-	-	-	-	-	-	-	-	-	-	-
1940	20	-	-	-	-	-	-	-	-	-	-	-	-
1939	21	-	7	7	-	86.0	86.0	-	-	-	-	-	-
Total ‰		514	484	998				541	454	1000			
Serial Numbers			10a						11				
Number of Samples													
Number of Fish Aged		72	68	140				101	85	187*			
Mean Age			10.1						9.7				
Mean Weight (Kg)			...						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			60-80						...				

1) The length frequencies of these samples are given in Table 10 ; the age/length keys are given in Table 31.

* one specimen not sexed

(cont'd.)

TABLE 23 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1)] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Banks) - Research Catches

Location		1D - Dana Bank					
		62°49'N, 51°09'W					
Gear		Longline					
Month		August					
Year-		‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Total	♂♂	♀♀	Total
1954	6	49	20	69	63.8	68.0	65.0
1953	7	20	29	49	74.5	69.0	70.0
1952	8	10	20	30	70.0	72.0	71.3
1951	9	39	20	59	77.5	88.0	81.0
1950	10	49	108	157	77.2	85.6	83.0
1949	11	-	39	39	-	90.3	90.3
1948	12	59	10	69	88.2	88.0	88.1
1947	13	196	206	402	86.3	89.8	88.0
1946	14	10	-	10	78.0	-	78.0
1945	15	20	39	59	98.0	83.3	88.2
1944	16	10	10	20	85.0	100.0	92.5
1943	17	20	-	20	96.5	-	96.5
1942	18	-	10	10	-	127.0	127.0
1941	19	-	10	10	-	89.0	89.0
Total ‰		482	521	1003			
Serial Numbers			11a				
Number of Samples							
Number of Fish Aged		49	53	102			
Mean Age				11.6			
Mean Weight (Kg)							
Total Wt.Landed(Tons)							
Estimated No. Landed							
Hook Size							
Range of Depths (m)				60-80			

1) The length frequencies of these samples are given in Table 10; the age/length keys are given in Table 31.

TABLE 24 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
by sexes, with mean length at each age

West Greenland (Inshore and Fjords) - Research Catches

Location		1D - Godthåb Fjord											
		64°24'N, 50°23'W											
Gear		Handline											
Month		February											
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	13	8	21	40.0	43.0	41.2	-	-	-	-	-	-
1955	5	119	106	225	54.6	55.5	55.0	17	-	17	57.7	-	57.7
1954	6	34	51	85	59.0	57.3	58.0	-	-	-	-	-	-
1953	7	4	42	46	60.0	65.1	64.6	57	40	97	64.9	67.1	65.8
1952	8	106	144	250	68.1	69.9	69.1	103	195	298	68.9	72.4	71.2
1951	9	13	17	30	72.3	71.0	71.6	11	6	17	76.0	63.0	71.7
1950	10	34	55	89	73.6	74.1	73.9	34	80	114	74.8	75.3	75.1
1949	11	13	25	38	78.3	76.7	77.2	17	40	57	75.3	79.7	78.4
1948	12	13	25	38	77.0	80.5	79.3	11	29	40	77.0	79.0	78.4
1947	13	17	51	68	81.0	80.8	80.9	34	52	86	80.0	77.6	78.6
1946	14	4	4	8	67.0	87.0	77.0	6	6	12	81.0	93.0	87.0
1945	15	21	21	42	81.6	83.8	82.7	52	46	98	79.9	81.4	80.6
1944	16	-	4	4	-	84.0	84.0	-	17	17	-	82.0	82.0
1943	17	-	4	4	-	90.0	90.0	6	17	23	75.0	79.3	78.3
1942	18	13	17	30	77.7	83.0	80.7	29	23	52	79.2	80.0	79.6
1941	19	-	4	4	-	80.0	80.0	-	6	6	-	77.0	77.0
1940	20	8	4	12	88.5	89.0	88.7	11	40	51	91.0	92.0	91.8
1939	21	-	4	4	-	97.0	97.0	6	-	6	88.0	-	88.0
1938	22	-	-	-	-	-	-	6	-	6	83.0	-	83.0
Total ‰		412	586	998				400	597	997			
Serial Numbers			33						34				
Number of Samples													
Number of Fish Aged		97	139	236				70	104	174			
Mean Age			8.8						10.9				
Mean Weight (Kg)			3.6						4.5				
Total Wt.Landed(Tons)													
Estimated Np. Landed													
Hook Size													
Range of Depths (m)			240						240				

[1] The length frequencies of these samples are given in Table 11; the age/length keys are given in Table 32.

(cont'd.)

TABLE 24 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Inshore and Fjords) - Research Catches

Location		1D - Godthåb Fjord											
		64°24'N, 50°23'W						64°12'N, 51°50'W					
Gear		Handline											
Month		February						April					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	-	-	-	-	-	-	→		265	-	-	36.0
1956	4	-	-	-	-	-	-	121	182	402	49.4	47.7	47.1
1955	5	-	31	31	-	59.0	59.0	45	61	129	53.2	58.9	55.5
1954	6	21	10	31	63.5	56.0	61.0	15	38	61	63.0	69.4	67.3
1953	7	-	21	21	-	72.0	72.0	23	61	84	59.7	73.6	69.8
1952	8	104	229	333	70.6	69.3	69.7	15	23	38	70.0	78.7	75.2
1951	9	10	10	20	68.0	77.0	72.5	-	8	8	-	83.0	83.0
1950	10	62	104	166	75.8	74.6	75.1	-	-	-	-	-	-
1949	11	42	62	104	72.0	82.5	78.3	-	-	-	-	-	-
1948	12	10	31	41	83.0	70.0	73.3	-	-	-	-	-	-
1947	13	21	42	63	79.0	79.0	79.0	-	-	-	-	-	-
1946	14	-	10	10	-	84.0	84.0	-	-	-	-	-	-
1945	15	10	52	62	79.0	84.2	83.3	8	-	8	76.0	-	76.0
1944	16	-	-	-	-	-	-	-	-	-	-	-	-
1943	17	-	21	21	-	85.5	85.5	-	-	-	-	-	-
1942	18	31	10	41	76.3	82.0	77.8	-	8	8	-	90.0	90.0
1941	19	-	10	10	-	82.0	82.0	-	-	-	-	-	-
1940	20	10	10	20	72.0	79.0	75.5	-	-	-	-	-	-
1939	21	10	10	20	77.0	91.0	84.0	-	-	-	-	-	-
Total ‰		331	663	994				227	381	1003			
Serial Numbers			35						24				
Number of Samples													
Number of Fish Aged		32	64	96				30	50	132*			
Mean Age			10.7						4.6				
Mean Weight (Kg)			4.5						1.9				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			...						70-90				

[1] The length frequencies of these samples are given in Table 11; the age/length keys are given in Table 32.

* 52 specimens not sexed

(cont'd.)

TABLE 24 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Inshore and Fjords) - Research Catches

Location		1D - Godthåb Fjord											
		64°15'N, 50°53'W						64°25'N, 50°23'W					
Gear		Handline											
Month		April											
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	28	28	56	37.5	37.0	37.3	-	-	-	-	-	-
1956	4	282	296	578	46.0	45.7	45.8	-	-	-	-	-	-
1955	5	99	70	169	52.1	54.2	53.0	270	32	302	58.9	61.5	59.1
1954	6	70	14	84	59.4	62.0	59.8	40	8	48	61.2	66.0	62.0
1953	7	-	28	28	-	59.5	59.5	71	8	79	67.3	65.0	67.1
1952	8	-	42	42	-	79.0	79.0	135	79	214	68.5	71.6	69.6
1951	9	-	-	-	-	-	-	16	8	24	74.5	71.0	73.3
1950	10	14	14	28	72.0	73.0	72.5	87	56	143	73.8	77.4	75.2
1949	11	14	-	14	68.0	-	68.0	24	24	48	80.3	75.0	77.7
1948	12	-	-	-	-	-	-	16	8	24	75.5	91.0	80.7
1947	13	-	-	-	-	-	-	40	16	56	79.2	86.0	81.1
1946	14	-	-	-	-	-	-	-	8	8	-	83.0	83.0
1945	15	-	-	-	-	-	-	32	-	32	73.8	-	73.8
1944	16	-	-	-	-	-	-	8	-	8	77.0	-	77.0
1943	17	-	-	-	-	-	-	-	8	8	-	81.0	81.0
1942	18	-	-	-	-	-	-	-	-	-	-	-	-
1941	19	-	-	-	-	-	-	-	-	-	-	-	-
1940	20	-	-	-	-	-	-	8	-	8	71.0	-	71.0
Total ‰		507	492	999				747	255	1002			
Serial Numbers			32						36				
Number of Samples													
Number of Fish Aged		36	35	71				94	32	126			
Mean Age			4.9						8.2				
Mean Weight (Kg)			...						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)		60-100							...				

[1] The length frequencies of these samples are given in Table 11; the age/length keys are given in Table 32.

(cont'd.)

TABLE 24 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Inshore and Fjords) - Research Catches

Location		1D - Godthåb Fjord											
		64°07'N, 52°21'W						64°12'N, 51°42'W					
Gear		Handline											
Month		June						July					
Year-		°/oo Frequency			Mean Length			°/oo Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1958	2	-	-	-	-	-	-	10	5	20*	27.0	27.0	27.0
1957	3	45	14	59	42.9	38.3	41.8	213	119	337*	37.8	38.2	37.9
1956	4	428	324	752	50.7	50.4	50.6	248	228	476	49.1	48.7	48.9
1955	5	54	54	108	58.6	58.5	58.5	54	30	84	56.8	55.0	56.2
1954	6	5	18	23	62.0	67.8	66.6	5	30	35	61.0	65.0	64.4
1953	7	14	18	32	75.0	73.0	73.9	15	10	25	64.7	69.5	66.7
1952	8	5	-	5	76.0	-	76.0	5	5	10	78.0	73.0	75.5
1951	9	5	5	10	79.0	80.0	79.5	5	-	5	72.0	-	72.0
1950	10	-	5	5	-	72.0	72.0	-	-	-	-	-	-
1949	11	-	-	-	-	-	-	-	-	-	-	-	-
1948	12	5	-	5	85.0	-	85.0	-	-	-	-	-	-
1947	13	5	-	5	82.0	-	82.0	10	-	10	85.0	-	85.0
Total °/oo		566	438	1004				565	427	1002			
Serial Numbers			25						27				
Number of Samples													
Number of Fish Aged		125	97	222				114	86	202**			
Mean Age			4.4						4.0				
Mean Weight (Kg)			...						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			...						...				

[1] The length frequencies of these samples are given in Table 11; the age/length keys are given in Table 32.

* one specimen not sexed

** two specimens not sexed

(cont'd.)

TABLE 24 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Inshore and Fjords) - Research Catches

Location		1D - Godthåb Fjord											
		64°08'N, 51°48'W						64°03'N, 52°12'W					
Gear		Handline						Longline					
Month		September						April					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	338	228	566	42.1	41.7	41.9	-	-	-	-	-	-
1956	4	210	119	329	50.2	49.4	49.9	33	17	50	48.0	44.0	46.6
1955	5	32	32	64	58.4	61.1	59.8	83	125	208	57.2	58.9	58.2
1954	6	9	9	18	63.5	64.5	64.0	58	150	208	60.9	66.6	65.0
1953	7	5	5	10	68.0	68.0	68.0	67	142	209	66.5	69.4	68.5
1952	8	9	5	14	69.5	82.0	37.7	25	50	75	69.7	72.2	71.3
1951	9	-	-	-	-	-	-	17	17	34	68.0	74.0	71.0
1950	10	-	-	-	-	-	-	50	25	75	72.0	83.3	75.8
1949	11	-	-	-	-	-	-	8	8	16	83.0	81.0	82.0
1948	12	-	-	-	-	-	-	8	8	16	77.0	80.0	78.5
1947	13	-	-	-	-	-	-	25	33	58	80.7	84.8	83.0
1946	14	-	-	-	-	-	-	8	8	16	91.0	80.0	85.5
1945	15	-	-	-	-	-	-	8	8	16	96.0	85.0	90.5
1944	16	-	-	-	-	-	-	-	-	-	-	-	-
1943	17	-	-	-	-	-	-	8	-	8	90.0	-	90.0
1942	18	-	-	-	-	-	-	-	8	8	-	93.0	93.0
Total ‰		603	398	1001				398	599	997			
Serial Numbers			28						23				
Number of Samples													
Number of Fish Aged		132	87	219				48	72	120			
Mean Age			3.6						7.5				
Mean Weight (Kg)			ca.1.4						3.1				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			...						150				

[1] The length frequencies of these samples are given in Table 11; the age/length keys are given in Table 32.

(cont'd.)

TABLE 24 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Inshore and Fjords) - Research Catches

Location		1D - Godthåb Fjord											
		64°06'N, 51°38'W						63°55'N, 51°30'W					
Gear		Longline											
Month		July						October					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	13	-	13	34.0	-	34.0	6	-	13*	45.0	-	45.0
1956	4	13	38	51	58.0	50.7	52.5	32	13	45	57.4	62.5	58.9
1955	5	-	51	51	-	63.0	63.0	38	13	51	64.5	67.0	65.1
1954	6	-	51	51	-	64.0	64.0	64	58	122	67.9	66.8	67.4
1953	7	38	218	256	71.0	72.6	72.4	58	96	154	72.0	76.3	74.7
1952	8	26	179	205	77.0	75.9	76.0	13	32	45	83.5	77.2	79.0
1951	9	26	13	39	76.0	82.0	78.0	26	19	45	76.4	74.0	75.4
1950	10	38	115	153	75.7	84.3	82.2	71	128	199	78.6	80.8	80.0
1949	11	-	-	-	-	-	-	6	-	6	80.0	-	80.0
1948	12	-	38	38	-	80.3	80.3	19	19	38	76.3	82.7	79.5
1947	13	38	38	76	84.0	88.7	86.3	122	115	237	81.3	83.8	82.5
1946	14	-	26	26	-	93.5	93.5	6	6	12	77.0	116.0	96.5
1945	15	-	13	13	-	105.0	105.0	6	13	19	111.0	96.0	101.0
1944	16	-	-	-	-	-	-	-	-	-	-	-	-
1943	17	-	-	-	-	-	-	-	-	-	-	-	-
1942	18	-	13	13	-	90.0	90.0	13	-	13	84.5	-	84.5
1941	19	-	-	-	-	-	-	-	-	-	-	-	-
1940	20	-	13	13	-	93.0	93.0	-	-	-	-	-	-
Total ‰		192	806	998				480	512	999			
Serial Numbers			26						29				
Number of Samples													
Number of Fish Aged		15	63	78				75	80	156*			
Mean Age			8.6						9.3				
Mean Weight (Kg)			4.2						4.8				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			20-80						100-210				

[1] The length frequencies of these samples are given in Table 11; the age/length keys are given in Table 32.

* one specimen unsexed

(cont'd.)

TABLE 24 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Inshore and Fjords) - Research Catches

Location		1D - Godthåb Fjord											
		64°06'N, 51°49'W						64°07'N, 51°53'W					
Gear		Longline											
Month		November											
Year-Class	Age	‰ Frequency			Mean Length			‰ Frequency			Mean Length		
		♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	66	11	77	44.2	51.0	45.1	22	29	51	47.5	46.8	47.0
1956	4	22	33	55	53.0	56.7	55.2	7	-	7	61.0	-	61.0
1955	5	44	44	88	65.3	67.0	66.1	65	43	108	63.2	64.7	63.8
1954	6	33	22	55	69.7	68.5	69.2	22	14	36	66.0	69.0	67.2
1953	7	88	121	209	70.8	74.4	72.8	58	167	225	74.3	75.0	74.8
1952	8	33	66	99	73.0	78.7	76.8	43	72	115	74.0	77.8	76.4
1951	9	22	44	66	74.5	77.3	76.3	-	22	22	-	79.0	79.0
1950	10	66	88	154	83.7	85.4	84.6	58	58	116	78.6	80.9	79.8
1949	11	33	-	33	83.7	-	83.7	7	-	7	71.0	-	71.0
1948	12	11	11	22	77.0	82.0	79.5	14	22	36	76.0	80.0	78.4
1947	13	55	44	99	82.0	85.8	83.8	65	109	174	80.6	82.6	81.8
1946	14	-	-	-	-	-	-	-	7	7	-	81.0	81.0
1945	15	11	11	22	77.0	81.0	79.0	7	14	21	77.0	83.0	81.0
1944	16	-	-	-	-	-	-	7	7	14	86.0	80.0	83.0
1943	17	-	-	-	-	-	-	-	14	14	-	84.5	84.5
1942	18	11	11	22	113.0	80.0	96.5	7	22	29	83.0	94.7	91.8
1941	19	-	-	-	-	-	-	-	-	-	-	-	-
1940	20	-	-	-	-	-	-	14	-	14	84.5	-	84.5
Total ‰		495	506	1001				396	600	996			
Serial Numbers			30						31				
Number of Samples													
Number of Fish Aged		45	46	91				55	83	138			
Mean Age			7.6						9.3				
Mean Weight (Kg)			4.5						4.6				
Total Wt. Landed (Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			50-110						ca. 300				

[1] The length frequencies of these samples are given in Table 11; the age/length keys are given in Table 32.

(cont'd.)

TABLE 24 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1)] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

West Greenland (Inshore and Fjords) - Research Catches

Location		60°10'N,45°28'W—60°03'N,45°08'W						(1F) 60°03'N,46°10'W—60°03'N,46°08'W					
		Kitsigssut & Kap Egede						Kitsigssut					
Gear		Handline						Longline					
Month		September						September-October					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	56	85	141	52.1	50.4	51.1	2	5	7	49.0	47.0	47.7
1955	5	26	13	43*	56.8	57.0	56.9	2	2	4	53.0	53.0	53.0
1954	6	9	13	22	65.0	61.3	62.8	4	6	11*	63.7	63.0	63.3
1953	7	111	150	265*	67.8	68.5	68.2	88	70	159*	66.7	67.4	67.0
1952	8	73	60	133	71.0	73.4	72.1	39	28	67	69.7	71.8	70.6
1951	9	30	51	90**	73.9	74.5	74.3	25	24	49	73.7	73.7	73.7
1950	10	68	85	162**	77.1	78.2	77.7	64	85	149	74.7	78.6	76.9
1949	11	13	21	34	80.0	77.4	78.4	22	19	41	76.6	78.6	77.5
1948	12	–	4	4	–	79.0	79.0	18	12	30	73.2	74.3	73.6
1947	13	60	26	90*	76.1	77.8	76.6	264	161	425	73.5	75.7	74.3
1946	14	4	–	4	71.0	–	71.0	5	7	12	72.0	77.7	75.4
1945	15	4	–	4	60.0	–	60.0	12	16	28	75.9	76.5	76.2
1944	16	–	–	–	–	–	–	–	1	1	–	83.0	83.0
1943	17	–	–	–	–	–	–	1	1	2	82.0	91.0	86.5
1942	18	9	–	9	82.5	–	82.5	4	5	9	81.0	85.3	83.4
1941	19	–	–	–	–	–	–	–	–	–	–	–	–
1940	20	–	–	–	–	–	–	–	4	4	–	89.0	89.0
–	–	–	–	–	–	–	–	–	–	–	–	–	–
1936	24	–	–	–	–	–	–	–	1	1	–	116.0	116.0
Total ‰		463	508	1001				550	447	999			
Serial Numbers													
Number of Samples													
Number of Fish Aged		108	119	234***				456	372	830**			
Mean Age			8.1						10.9				
Mean Weight (Kg)			3.0						3.5				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths			...						60 fm				

1) The length frequencies of these samples are given in Table 11; the age/length keys are given in Table 32.

* one specimen not sexed
** two specimens not sexed
*** seven specimens not sexed

TABLE 25 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
by sexes, with mean length at each age

Greenlanders' - Commercial Landings

Location		1A											
		69°03'N, 51°00'W						Jakobshavn					
Month		August+September						September					
Year-		°/oo Frequency			Mean Length			°/oo Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1955	5	10	10	20	76.0	65.0	70.5	-	-	-	-	-	-
1954	6	32	21	53	67.0	70.0	68.2	-	-	-	-	-	-
1953	7	221	263	495*	72.6	73.0	73.0	50	90	140	73.5	74.0	73.8
1952	8	21	63	84	76.5	78.2	77.8	10	25	35	76.5	77.6	77.2
1951	9	42	63	105	76.5	79.3	78.2	-	65	65	-	81.7	81.7
1950	10	63	10	73	81.3	88.0	82.3	35	110	145	84.6	85.8	85.5
1949	11	-	-	-	-	-	-	-	-	-	-	-	-
1948	12	-	21	21	-	86.0	86.0	20	40	60	80.5	86.9	84.8
1947	13	63	53	116	87.8	89.2	88.5	130	185	315	84.5	86.5	85.7
1946	14	-	-	-	-	-	-	5	10	15	81.0	88.0	85.7
1945	15	-	21	21	-	95.0	95.0	30	30	60	89.3	88.5	88.9
1944	16	-	-	-	-	-	-	15	20	35	86.7	99.8	94.2
1943	17	-	-	-	-	-	-	15	20	35	86.7	86.0	86.3
1942	18	10	-	10	87.0	-	87.0	35	30	65	85.6	93.7	89.3
1941	19	-	-	-	-	-	-	5	10	15	85.0	96.0	92.3
1940	20	-	-	-	-	-	-	5	10	15	84.0	95.0	91.3
Total °/oo		462	525	998				355	645	1000			
Serial Numbers			14						13				
Number of Samples													
Number of Fish Aged		44	50	95*				71	129	200			
Mean Age			8.5						12.1				
Mean Weight (Kg)			ca.4.8						6.3				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)													

[1] The length frequencies of these samples are given in Table 12; the age/length keys are given in Table 33.

* one specimen not sexed.

(cont'd.)

TABLE 25 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

Greenlanders' - Commercial Landings

Location		1B											
		66°55'N, 53°35'W						2)					
Month		July-August						August + September					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	15	25	40	43.0	47.6	45.9	4	1	5	48.7	50.0	49.0
1956	4	110	95	205	51.9	51.7	51.8	12	12	24	54.8	53.4	54.1
1955	5	140	145	285	59.4	61.1	60.2	49	64	113	62.0	62.2	62.1
1954	6	75	50	125	65.9	66.7	66.2	78	77	155	67.6	69.3	68.5
1953	7	115	75	195*	70.5	71.1	70.7	216	282	498	72.3	73.2	72.8
1952	8	10	40	50	75.5	78.1	77.6	21	21	42	78.1	75.9	77.0
1951	9	5	5	10	73.0	89.0	81.0	6	7	13	77.0	84.2	81.0
1950	10	25	40	65	79.2	84.6	82.5	16	28	44	81.9	85.7	84.3
1949	11	-	-	-	-	-	-	1	1	2	82.0	83.0	84.0
1948	12	5	5	10	83.0	85.0	84.0	3	7	10	97.5	86.2	89.4
1947	13	5	5	10	90.0	91.0	90.5	34	49	83	84.3	87.1	86.0
1946	14	-	-	-	-	-	-	3	4	7	92.0	92.3	92.2
1945	15	-	-	-	-	-	-	-	-	-	-	-	-
1944	16	-	5	5	-	112.0	112.0	-	-	-	-	-	-
1943	17	-	-	-	-	-	-	-	1	1	-	90.0	90.0
1942	18	-	-	-	-	-	-	-	1	1	-	104.0	104.0
Total ‰		505	490	1000				443	555	998			
Serial Numbers			17						16				
Number of Samples													
Number of Fish Aged		101	98	200*				300	377	677			
Mean Age			5.7						7.4				
Mean Weight (Kg)			2.7						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			...						...				

1) The length frequencies of these samples are given in Table 12; the age/length keys are given in Table 33.

2) 68°14'N, 52°42'W—68°00'N, 53°28'W—67°56'N, 53°30'W

* = one specimen not sexed

(cont'd.)

TABLE 25 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

Greenlanders' - Commercial Landings

Location		1B [2]						1D 63°42'N, 50°52'W					
Month		September + October						July					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	2	6	8	36.0	35.0	35.0	-	-	-	-	-	-
1956	4	6	6	12	52.7	42.0	47.3	135	155	290	53.7	53.0	53.3
1955	5	41	35	76	58.6	58.4	58.5	70	105	175	59.9	61.1	60.6
1954	6	56	61	117	65.0	65.4	65.2	20	65	85	64.8	67.2	66.6
1953	7	200	284	484	68.7	71.4	70.3	105	155	260	71.5	73.1	72.4
1952	8	28	37	65	74.9	77.0	76.1	25	10	35	78.8	77.5	78.4
1951	9	13	37	50	77.1	79.6	79.0	10	20	30	77.0	82.0	80.3
1950	10	37	63	100	79.0	82.9	81.5	20	45	65	74.3	79.0	77.5
1949	11	-	6	6	-	85.0	85.0	5	-	5	91.0	-	91.0
1948	12	6	-	6	78.3	-	78.3	5	-	5	80.0	-	80.0
1947	13	28	30	58	81.5	82.4	82.0	15	25	40	84.3	85.0	84.8
1946	14	-	2	2	-	93.0	93.0	-	-	-	-	-	-
1945	15	4	4	8	64.5	87.5	76.0	-	5	5	-	88.0	88.0
1944	16	2	-	2	90.0	-	90.0	-	-	-	-	-	-
1943	17	4	2	6	85.0	82.0	84.0	-	-	-	-	-	-
1942	18	-	4	4	-	83.0	83.0	5	-	5	97.0	-	97.0
Total ‰		427	577	1004				415	585	1000			
Serial Numbers			15						18				
Number of Samples													
Number of Fish Aged		229	310	539				83	117	200			
Mean Age			7.7						6.4				
Mean Weight (Kg)			...						2.8				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			...						...				

[1] The length frequencies of these samples are given in Table 12; the age/length keys are given in Table 33.

[2] 68°44'N, 52°12'W—68°42'N, 52°45'W—68°51'N, 52°58'W

(cont'd.)

TABLE 25 DENMARK (Greenland) – 1960 AGE FREQUENCIES – COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

Greenlanders' – Commercial Landings

Location		1D						1E					
		63°42'N, 50°52'W						Frederikshab					
Month		September						May			June		
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	342	417	774***	53.3	53.1	53.2	223	145	368	47.0	47.3	47.1
1955	5	65	55	120	59.5	58.2	58.9	67	45	112	58.3	57.1	57.8
1954	6	–	10	10	–	66.0	66.0	39	28	67	59.0	64.0	61.1
1953	7	10	45	55	76.0	71.3	72.2	134	173	307	70.9	70.3	70.5
1952	8	5	–	5	95.0	–	95.0	34	50	84	78.0	75.1	76.3
1951	9	–	–	–	–	–	–	6	11	17	70.0	72.0	71.3
1950	10	10	10	25*	66.5	83.0	79.0	22	11	33	78.0	76.5	77.5
1949	11	–	5	5	–	76.0	76.0	6	–	6	88.0	–	88.0
1948	12	–	–	–	–	–	–	–	–	–	–	–	–
1947	13	–	–	–	–	–	–	–	6	6	–	89.0	89.0
1946	14	–	–	–	–	–	–	–	–	–	–	–	–
1945	15	–	–	–	–	–	–	–	–	–	–	–	–
1944	16	–	5	5	–	103.0	103.0	–	–	–	–	–	–
Total ‰		432	547	999				531	469	1000			
Serial Numbers			19						20				
Number of Samples													
Number of Fish Aged		86	109	199****				95	84	179			
Mean Age			4.6						5.9				
Mean Weight (Kg)			1.8						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			...						...				

[1] The length frequencies of these samples are given in Table 12; the age/length keys are given in Table 33.

* one specimen not sexed *** three specimens not sexed **** four specimens not sexed

(cont'd.)

TABLE 25 DENMARK (Greenland) - 1960 AGE FREQUENCIES - COD[1] by Paul M. Hansen
(cont'd.) by sexes, with mean length at each age

Greenlanders' - Commercial Landings

Location		1E						1F					
		62°00'N, 49°43'W						60°32'N, 45°34'W					
Month		October						September					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	62	46	108	50.9	51.8	51.3	-	-	-	-	-	-
1955	5	15	52	67	62.3	59.1	59.8	-	-	-	-	-	-
1954	6	41	26	67	64.4	64.6	64.5	-	-	-	-	-	-
1953	7	72	160	232	71.5	74.3	73.4	43	130	173	71.3	70.0	70.3
1952	8	41	36	77	70.8	75.1	72.8	43	72	115	78.3	72.8	74.9
1951	9	15	26	41	75.3	76.6	76.1	14	29	43	82.0	75.0	77.3
1950	10	62	77	139	74.8	80.2	77.8	116	188	304	80.8	83.8	82.6
1949	11	10	15	25	73.0	76.3	75.0	43	43	86	84.0	83.3	83.7
1948	12	41	46	87	72.3	77.8	75.2	29	14	43	79.0	76.0	78.0
1947	13	108	31	139	75.2	87.2	77.9	72	130	202	77.8	78.9	78.5
1946	14	5	5	10	76.0	88.0	82.0	-	-	-	-	-	-
1945	15	-	5	5	-	74.0	74.0	-	14	14	-	82.0	82.0
1944	16	-	-	-	-	-	-	-	-	-	-	-	-
1943	17	-	-	-	-	-	-	-	-	-	-	-	-
1942	18	-	-	-	-	-	-	-	14	14	-	89.0	89.0
Total ‰		472	525	997				360	634	994			
Serial Numbers			21						22				
Number of Samples													
Number of Fish Aged		92	102	194				25	44	69			
Mean Age			8.5						10.2				
Mean Weight (Kg)			...						...				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Hook Size													
Range of Depths (m)			...						...				

[1] The length frequencies of these samples are given in Table 12; the age/length keys are given in Table 33.

TABLE 26 GERMANY - 1960 AGE FREQUENCIES - COD[1] with mean lengths by Arno Meyer

OTTER TRAWLERS[2] Commercial Landings

Division		1C				1C/D		1D			
Location		Banana Bank				Fyllas and Lille Hellefiske Bank		Fyllas Bank			
Month		June		December		July		April		August	
Year-Class	Age	‰	Mean Length	‰	Mean Length	‰	Mean Length	‰	Mean Length	‰	Mean Length
1957	3	-	-	16	-	-	-	-	-	-	-
1956	4	-	-	149	58.7	99	56.1	5	-	14	-
1955	5	80	-	391	64.6	100	60.2	111	58.7	53	-
1954	6	93	-	131	67.9	78	-	90	-	162	67.5
1953	7	635	70.7	262	73.9	469	70.9	564	70.0	444	73.0
1952	8	11	-	24	-	44	-	78	-	70	-
1951	9	36	-	8	-	50	-	11	-	42	-
1950	10	67	-	6	-	72	-	49	-	58	-
1949	11	-	-	-	-	11	-	-	-	18	-
1948	12	8	-	-	-	2	-	-	-	38	-
1947	13	46	-	6	-	47	-	53	-	85	-
1946	14	2	-	2	-	1	-	-	-	3	-
1945	15	10	-	-	-	20	-	8	-	13	-
<1945	>15	12	-	5	-	7	-	31	-	-	-
Total ‰		1000		1000		1000		1000		1000	
Serial Numbers		46		58		49		35		50	
Number of Samples		1		1		1		1		1	
Number of Fish Aged		163		204		189		178		189	
Mean Age											
Mean Weight (Kg)		2.5		2.5		3.3		2.4		3.0	
Total Wt Landed (Tons)		53		101		21		79		101	
Number Landed											
Mesh Size (mm)		110		110		110		110		110	
Range of Depths (fm)		...		100-110		...		...		50-60	

1) The length frequencies of these samples are given in Table 13; the age/length frequencies are given in Table 34.

2) 500-900 gross tons.

(cont'd.)

TABLE 26 GERMANY - 1960 (cont'd.)

AGE FREQUENCIES - COD[1] with mean lengths

by Arno Meyer

OTTER TRAWLERS[2] - Commercial Landings

Division		1E		East Greenland									
Location		Noname Bank		Angmagssalik						Tordenskjold			
Month		June		January		February		March		March		April	
Year-Class	Age	°/oo	Mean Length	°/oo	Mean Length	°/oo	Mean Length	°/oo	Mean Length	°/oo	Mean Length	°/oo	Mean Length
1956	4	1	-	-	-	-	-	-	-	-	-	-	-
1955	5	17	-	105	61.4	-	-	-	-	2	-	3	-
1954	6	72	-	203	74.8	6	-	16	-	5	-	23	-
1953	7	284	68.3	177	73.5	138	71.3	199	72.5	292	70.8	203	69.8
1952	8	57	-	43	-	103	73.0	144	75.9	101	72.7	69	-
1951	9	86	75.5	53	-	73	-	131	76.3	128	76.7	64	-
1950	10	167	79.5	320	76.0	526	78.3	355	79.7	264	78.3	270	79.2
1949	11	24	-	86	-	131	83.0	87	-	25	-	27	-
1948	12	46	-	-	-	5	-	6	-	28	-	56	-
1947	13	187	81.3	8	-	18	-	38	-	115	81.0	180	81.8
1946	14	16	-	-	-	-	-	-	-	6	-	4	-
1945	15	29	-	5	-	-	-	23	-	22	-	71	-
<1945	>15	14	-	-	-	-	-	1	-	12	-	30	-
Total °/oo		1000		1000		1000		1000		1000		1000	
Serial Numbers		41-44		13		16		32		24/27		33	
Number of Samples		4		1		1		1		2		1	
Number of Fish Aged		360		177		184		177		203		231	
Mean Age													
Mean Weight (Kg)		3.0		2.9		3.2		3.0		2.9		3.3	
Total Wt.Landed(Tons)		481		19		85		123		149		169	
Number Landed													
Mesh Size (mm)		110		110		110		110		110		110	
Range of Depths (fm)		...		...		...		...		...		...	

[1] The length frequencies of these samples are given in Table 13; the age/length frequencies are given in Table 34.

[2] 500-900 gross tons.

(cont'd.)

TABLE 26 GERMANY - 1960 (cont'd.)

AGE FREQUENCIES - COD[1] with mean lengths

by Arno Meyer

OTTER TRAWLERS[2] Commercial Landings

Division		East Greenland									
Location		Fylkir Bank				Dohrn Bank					
Month		June		July		September		October		November	
Year-Class	Age	‰	Mean Length	‰	Mean Length	‰	Mean Length	‰	Mean Length	‰	Mean Length
1956	4	7	-	74	-	-	-	26	-	28	-
1955	5	32	-	61	-	32	-	15	-	50	-
1954	6	30	-	121	59.5	31	-	36	-	94	-
1953	7	462	65.1	259	70.4	296	80.0	348	78.7	223	78.7
1952	8	195	69.7	139	74.8	99	-	133	79.9	105	79.9
1951	9	86	-	113	79.4	43	-	49	-	84	-
1950	10	90	-	197	82.6	305	87.7	255	85.5	315	86.6
1949	11	12	-	19	-	125	91.5	135	89.8	58	-
1948	12	13	-	-	-	-	-	-	-	6	-
1947	13	20	-	3	-	34	-	-	-	20	-
1946	14	3	-	6	-	-	-	-	-	-	-
1945	15	29	-	3	-	35	-	3	-	12	-
<1945	>15	21	-	5	-	-	-	-	-	5	-
Total ‰		1000		1000		1000		1000		1000	
Serial Numbers		45		47		53		54		56/57	
Number of Samples		1		1		1		1		2	
Number of Fish Aged		205		196		171		188		190	
Mean Age											
Mean Weight (Kg)		2.4		2.7		4.5		4.3		4.7	
Total Wt.Landed(Tons)		...		...		14		39		105	
Number Landed											
Mesh Size (mm)		110		110		110		110		110	
Range of Depths (fm)		...		...		...		...		...	

1) The length frequencies of these samples are given in Table 13; the age/length frequencies are given in Table 34.

2) 500-900 gross tons.

TABLE 27 GERMANY - 1960 AGE FREQUENCIES - COD[1] by Arno Meyer

with mean lengths

OTTER TRAWLERS[2] Research Catches

Division		1C		1D				1E	
Location		Lille Hellefiske Bank		Fyllas Bank		Fiskenaes Bank		Danas Bank	
Month		April							
Year-Class	Age	‰	Mean Length	‰	Mean Length	‰	Mean Length	‰	Mean Length
1957	3	52	-	-	-	-	-	-	-
1956	4	78	-	51	-	-	-	333	48.4
1955	5	317	58.3	23	-	25	-	52	-
1954	6	172	65.8	158	64.7	32	-	49	-
1953	7	299	72.0	547	69.0	623	70.0	396	69.5
1952	8	12	-	117	74.5	12	-	96	-
1951	9	30	-	57	-	88	-	16	-
1950	10	40	-	33	-	89	-	38	-
1949	11	-	-	-	-	21	-	-	-
1948	12	-	-	-	-	-	-	6	-
1947	13	-	-	-	-	42	-	14	-
<1947	>13	-	-	14	-	68	-	-	-
Total ‰		1000		1000		1000		1000	
Serial Numbers		2,3,5,9		10-12		13,16,17		18-20	
Number of Samples		4		3		3		3	
Number of Fish Aged		83		78		86		102	
Mean Age									
Mean Weight (Kg)									
Total Wt. Landed (Tons)									
Number Landed									
Mesh Size (mm)		110		110		110		110	
Range of Depths (fm)		75-100		80-160		120-170		40-120	

1) The length frequencies of these samples are given in Table 14; the age/length frequencies are given in Table 35.

2) 500-900 gross tons.

(cont'd.)

TABLE 27 GERMANY – 1960 (cont'd.) AGE FREQUENCIES – COD[1] with mean length by Arno Meyer

OTTER TRAWLERS[2] – Research Catches

Division		1F		East Greenland					
		Nanertalik		Discord-Fylkir		Mosting		Angmagssalik	
Month		May							
Year-Class	Age	‰	Mean Length	‰	Mean Length	‰	Mean Length	‰	Mean Length
1956	4	272	44.8	–	–	35	–	24	–
1955	5	28	–	–	–	4	–	156	66.9
1954	6	10	–	15	–	44	–	344	70.9
1953	7	386	67.8	54	–	182	73.5	180	75.4
1952	8	69	–	15	–	67	–	12	–
1951	9	61	–	84	–	64	–	51	–
1950	10	96	79.1	227	84.3	327	82.5	220	83.9
1949	11	10	–	55	–	18	–	13	–
1948	12	–	–	38	–	14	–	–	–
1947	13	57	–	213	82.8	160	81.5	–	–
<1947	>13	11	–	–	–	–	–	–	–
1946	14	–	–	39	–	14	–	–	–
1945	15	–	–	114	88.3	22	–	–	–
<1945	>15	–	–	146	–	49	–	–	–
Total ‰		1000		1000		1000		1000	
Serial Numbers		38–41		58–73		77–119		121 128	
Number of Samples		4		6		4		2	
Number of Fish Aged		102		129		76		84	
Mean Age									
Mean Weight (Kg)									
Total Wt. Landed (Tons)									
Number Landed									
Mesh Size (mm)		110		110		110		110	
Range of Depths (fm)		160–270		100–200		130–200		240	

[1] The length frequencies of these samples are given in Table 14; the age/length frequencies are given in Table 35.

[2] 500–900 gross tons.

TABLE 28 NORWAY - 1960 AGE FREQUENCIES - COD[1] by E. Bratberg

by sexes, with mean length at each age

Research Catches

Gear		Otter Trawl											
Division		1C						1D					
Month		April											
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	248	289	537	48.57	48.69	48.63	139	218	357	48.79	49.68	49.33
1955	5	83	41	124	55.40	54.00	55.13	129	40	169	54.15	53.25	53.94
1954	6	50	83	133	62.00	63.40	62.87	20	20	40	65.00	66.50	65.75
1953	7	91	74	165	68.73	69.11	68.90	89	158	247	68.33	73.31	71.52
1952	8	17	8	25	72.00	80.00	74.67	40	59	99	72.00	76.50	74.70
1951	9	8	-	8	74.00	-	74.00	10	30	40	76.00	77.00	76.75
1950	10	-	-	-	-	-	-	10	20	30	74.00	80.00	78.00
1949	11	-	-	-	-	-	-	10	-	10	67.00	-	67.00
1948	12	-	-	-	-	-	-	-	10	10	-	82.00	82.00
1947	13	-	-	-	-	-	-	-	-	-	-	-	-
1946	14	8	-	8	77.00	-	77.00	-	-	-	-	-	-
Total ‰		505	495	1000				447	555	1002			
Serial Nos.													
No. of Samples				1						1			
No. of Fish Aged		61	60	121				45	56	101			
Mean Age		5.28	4.93	5.11				5.73	6.05	5.91			
Mean Weight (Kg)													
Tot.Wt.Landed(Tons)													
Est. No. Landed													
Mesh Size													
Range of Depths (fm)													

[1] The length frequencies of these samples are given in Table 16; the age/length keys are given in Table 36.

(cont'd.)

TABLE 28 NORWAY - 1960 (cont'd.) AGE FREQUENCIES - COD[1] by sexes, with mean length at each age by E. Bratberg

Research Catches

Gear		Bottom Longline											
Division		1C						1D					
Month		April											
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	-	-	-	-	-	-	3	-	3	55.00	-	55.00
1955	5	19	-	19	52.00	-	52.00	26	21	47	56.90	56.50	56.72
1954	6	58	-	58	65.00	-	65.00	54	57	111	64.24	65.50	64.88
1953	7	337	144	481	67.97	71.13	68.92	142	241	383	69.55	71.84	70.99
1952	8	87	77	164	71.44	73.75	72.53	36	60	96	72.57	75.35	74.30
1951	9	19	29	48	72.50	84.00	79.40	26	47	73	74.50	78.61	77.14
1950	10	58	19	77	77.67	81.00	78.50	23	36	59	80.89	80.64	80.74
1949	11	19	-	19	80.00	-	80.00	8	13	21	75.67	78.60	77.50
1948	12	38	-	38	77.75	-	77.75	5	21	26	83.00	88.87	87.70
1947	13	29	19	48	77.67	94.00	84.20	31	47	78	81.58	85.89	84.17
1946	14	29	-	29	87.67	-	87.67	3	29	32	80.00	88.73	88.00
1945	15	10	-	10	73.00	-	73.00	21	16	37	81.50	90.50	85.36
1944	16	10	-	10	71.00	-	71.00	5	5	10	78.50	88.00	83.25
1943	17	-	-	-	-	-	-	3	8	11	85.00	87.33	86.75
1942	18	-	-	-	-	-	-	3	5	8	89.00	87.50	88.00
1941	19	-	-	-	-	-	-	3	3	6	95.00	93.00	94.00
1940	20	-	-	-	-	-	-	-	3	3	-	81.00	81.00
Total ‰		713	288	1001				392	612	1004			
Serial Numbers													
No. of Samples				1						4			
No. of Fish Aged		74	30	104				151	235	386			
Mean Age		8.42	8.07	8.32				8.54	8.92	8.77			
Mean Weight (Kg)													
Tot.Wt.Landed(Tons)													
Est. No. Landed													
Hook Size													
Range of Depths (fm)													

[1] The length frequencies of these samples are given in Table 16; the age/length keys are given in Table 36.

(cont'd.)

TABLE 28 NORWAY - 1960 (cont'd.) AGE FREQUENCIES - COD[1] by sexes, with mean length at each age by E. Bratberg

Research Catches

Gear		Bottom Longline					
Division		1E					
Month		April					
Year-		‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	15	5	20	50.33	47.50	49.62
1955	5	33	43	76	57.46	58.06	57.80
1954	6	31	74	105	62.42	62.72	62.63
1953	7	148	278	426	71.67	72.27	72.06
1952	8	59	79	138	75.52	78.32	77.13
1951	9	5	51	56	76.00	81.70	81.18
1950	10	8	38	46	83.33	83.00	83.05
1949	11	3	23	26	83.00	89.67	89.00
1948	12	3	13	16	87.00	93.40	92.33
1947	13	10	23	33	90.00	89.22	89.46
1946	14	3	8	11	89.00	99.00	96.50
1945	15	3	10	13	76.00	84.50	82.80
1944	16	-	-	-	-	-	-
1943	17	8	5	13	88.00	84.50	86.60
1942	18	5	15	20	83.00	94.33	91.50
Total ‰		334	665	999			
Serial Numbers							
No. of Samples				3			
No. of Fish Aged		130	261	391			
Mean Age		7.61	8.15	7.97			
Mean Weight (Kg)							
Tot.Wt Landed(Tons)							
Est. No. Landed							
Hook Size							
Range of Depths (fm)							

[1] The length frequencies of these samples are given in Table 16; the age/length keys are given in Table 36.

TABLE 29 PORTUGAL - 1960 AGE FREQUENCIES - COD[1] by Mario J. Ruivo

by sexes, with mean length at each age Glicinia V. Quartin

OTTER TRAWLERS - Commercial Catches before Discarding

Division		1D						1E					
Month		May											
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	10	20	30	39.5	39.5	39.5	-	3	3	-	43.0	43.0
1956	4	320	230	550	46.8	47.5	47.1	164	201	365	45.9	46.9	46.4
1955	5	45	60	105	53.9	55.7	54.8	60	50	110	48.8	54.5	51.5
1954	6	20	25	45	64.0	66.4	65.2	44	23	67	65.7	63.5	64.6
1953	7	100	100	200	69.5	74.8	72.1	187	104	291	68.7	67.7	68.2
1952	8	10	25	35	64.0	77.4	70.7	10	47	57	77.0	74.0	75.5
1951	9	5	5	10	85.0	72.0	78.5	3	7	10	69.0	74.5	71.7
1950	10	-	10	10	-	82.5	82.5	20	23	43	80.0	78.4	79.2
1949	11	-	-	-	-	-	-	-	3	3	-	83.0	83.0
1948	12	-	5	5	-	90.0	90.0	10	13	23	78.3	79.3	79.3
1947	13	-	-	-	-	-	-	7	10	17	73.0	80.1	80.1
1946	14	-	10	10	-	86.5	86.5	-	7	7	-	84.0	84.0
1945	15	-	-	-	-	-	-	3	-	3	86.0	-	86.0
Total ‰		510	490	1000				508	491	999			
Serial Numbers		7-10						6-8-9					
Number of Samples		2						3					
Number of Fish Aged		200						299					
Mean Age		5.2						6.1					
Mean Weight (Kg)													
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)		114						114					
Range of Depths (m)		65-100						160-200					

[1] The length frequencies of these samples are given in Table 17; the age/length frequencies are given in Table 37.

(cont'd.)

TABLE 29 PORTUGAL - 1960 AGE FREQUENCIES - COD[1] by Mario J. Ruivo
(cont'd.) by sexes, with mean length at each age Glicinia V. Quartin
OTTER TRAWLERS - Commercial Catches before Discarding

Division		1F						2H					
Month		April						September					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	60	35	95	44.8	43.7	44.2	17	15	32	41.9	42.0	41.9
1955	5	50	20	70	54.2	54.3	54.2	86	53	139	47.1	47.9	47.5
1954	6	65	30	95	62.7	66.2	64.5	71	86	157	50.8	50.4	50.6
1953	7	270	210	480	67.0	67.6	67.3	50	63	113	53.2	56.5	54.9
1952	8	70	65	135	69.2	70.2	69.7	48	66	114	54.5	57.5	56.0
1951	9	25	25	50	71.8	74.6	73.2	50	63	113	57.5	59.5	58.6
1950	10	10	50	60	74.5	81.8	78.2	38	40	78	55.7	61.3	58.5
1949	11	-	10	10	-	76.0	76.0	28	38	66	60.6	61.9	61.3
1948	12	-	5	5	-	84.0	84.0	28	28	56	61.4	64.5	63.0
1947	13	-	-	-	-	-	-	33	20	53	64.5	64.3	64.4
1946	14	-	-	-	-	-	-	10	25	35	67.8	65.1	66.5
1945	15	-	-	-	-	-	-	5	25	30	67.5	66.2	66.9
1944	16	-	-	-	-	-	-	5	10	15	60.5	67.0	63.8
Total ‰		550	450	1000				469	532	1001			
Serial Numbers		1-3						37,38,40,41					
Number of Samples		2						4					
Number of Fish Aged		200						397					
Mean Age		6.9						8.5					
Mean Weight (Kg)													
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)		114						114					
Range of Depths (m)		130-150						102-256					

[1] The length frequencies of these samples are given in Table 17; the age/length frequencies are given in Table 37.

(cont'd.)

TABLE 29 PORTUGAL - 1960 AGE FREQUENCIES - COD[1] by Mario J. Ruivo
(cont'd.) by sexes, with mean length at each age Glicinia V. Quartin
OTTER TRAWLERS - Commercial Catches before Discarding

Division		2J											
Month		May						June					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	10	-	10	38.0	-	38.0	2	-	2	44.0	-	44.0
1955	5	40	-	40	43.8	-	43.8	14	16	30	46.4	44.6	45.5
1954	6	90	10	100	49.4	47.0	48.1	54	58	112	47.9	49.6	48.8
1953	7	70	40	110	49.7	51.5	50.1	76	110	186	51.1	52.2	51.7
1952	8	100	60	160	53.4	57.5	55.4	50	76	126	52.9	55.1	54.0
1951	9	60	70	130	53.0	57.4	55.2	48	82	130	55.6	56.1	55.9
1950	10	90	110	200	56.8	58.8	57.8	34	74	108	57.1	57.4	57.3
1949	11	40	20	60	57.0	55.5	56.2	26	54	80	58.2	57.9	58.1
1948	12	10	40	50	59.0	63.5	61.2	20	28	48	63.3	62.2	62.8
1947	13	10	70	80	61.0	64.0	62.5	20	32	52	65.1	63.1	64.1
1946	14	10	20	30	68.0	62.0	65.0	26	42	68	65.1	65.1	65.1
1945	15	20	10	30	62.5	64.0	63.3	16	30	46	63.5	65.1	64.3
1944	16	-	-	-	-	-	-	2	4	6	64.0	86.0	75.0
1943	17	-	-	-	-	-	-	-	4	4	-	65.0	65.0
Total ‰		550	450	1000				388	610	998			
Serial Numbers			1						2,4,7,10,12				
Number of Samples			1						5				
Number of Fish Aged			100						499				
Mean Age			9.2						9.3				
Mean Weight (Kg)													
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)			114						114				
Range of Depths (m)			320						230-300				

[1] The length frequencies of these samples are given in Table 17; the age/length frequencies are given in Table 37.

(cont'd.)

TABLE 81 PORTUGAL - 1960 AGE FREQUENCIES - COD[1)] by Mario J. Ruivo
(cont'd.) by sexes, with mean length at each age Glicinia V. Quartin
OTTER TRAWLERS - Commercial Catches before Discarding

Division		2J											
Month		August						September					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	19	20	39	41.1	42.1	41.6	8	20	28	43.0	43.0	43.0
1955	5	71	56	127	45.9	47.8	46.8	50	50	100	46.1	46.1	46.1
1954	6	62	73	135	50.8	51.0	50.9	65	68	133	50.0	50.3	50.2
1953	7	73	93	166	52.5	53.3	52.9	78	98	176	53.7	54.4	54.1
1952	8	59	82	141	55.8	52.3	54.0	70	90	160	54.7	55.9	55.3
1951	9	47	73	120	57.4	58.8	58.1	23	65	88	55.9	58.1	57.0
1950	10	50	37	87	58.3	61.1	59.7	28	40	68	56.5	59.8	58.2
1949	11	20	36	56	60.0	60.4	60.2	15	45	60	58.0	59.3	58.7
1948	12	19	37	56	59.7	64.2	61.9	23	25	48	62.6	66.7	64.7
1947	13	12	14	26	63.5	65.8	64.6	28	23	51	61.2	63.7	62.5
1946	14	3	20	23	65.0	67.6	66.3	18	35	53	61.9	65.9	63.9
1945	15	4	10	14	62.0	68.4	65.2	10	8	18	62.8	65.7	64.3
1944	16	1	6	7	65.0	65.0	65.0	10	8	18	63.5	71.3	67.4
1943	17	-	1	1	-	97.0	97.0	-	3	3	-	63.0	63.0
Total ‰		440	558	998				426	578	1004			
Serial Numbers		13,14,16,18, 22,25,26						29,31,34,35					
Number of Samples		7						4					
Number of Fish Aged		696						399					
Mean Age		8.1						8.6					
Mean Weight (Kg)													
Total Wt Landed (Tons)													
Estimated No. Landed													
Mesh Size (mm)		114						114					
Range of Depths (m)		183-228						210-265					

1) The length frequencies of these samples are given in Table 17; the age/length frequencies are given in Table 37.

(cont'd.)

TABLE 29 PORTUGAL - 1960 AGE FREQUENCIES - COD[1] by Mario J. Ruivo
(cont'd.) by sexes, with mean length at each age Glicinia V. Quartin
OTTER TRAWLERS - Commercial Catches before Discarding

Division		2J											
Month		October						November					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	60	20	80	49.2	48.0	48.6	5	15	20	43.0	43.0	43.0
1955	5	-	10	10	-	51.0	51.0	55	30	85	48.6	49.7	49.2
1954	6	40	70	110	48.8	50.6	49.7	60	68	128	53.3	54.1	53.7
1953	7	90	70	160	52.0	53.9	53.0	68	50	118	58.5	57.9	58.3
1952	8	70	70	140	55.3	55.4	55.4	70	83	153	59.3	59.6	59.5
1951	9	60	100	160	54.2	57.3	55.8	60	73	133	60.0	63.0	61.5
1950	10	30	30	60	56.3	53.7	55.0	63	48	111	61.5	63.3	62.4
1949	11	30	30	60	59.3	60.3	59.8	20	35	55	63.9	64.4	64.2
1948	12	50	30	80	59.2	62.7	61.0	33	53	86	64.7	68.8	66.8
1947	13	30	20	50	64.0	64.0	64.0	8	28	36	65.0	69.3	67.2
1946	14	30	-	30	64.3	-	64.3	18	20	38	66.7	71.1	68.9
1945	15	20	20	40	63.0	59.5	61.3	13	10	23	66.2	64.8	65.5
1944	16	-	20	20	-	68.0	68.0	5	5	10	75.0	76.5	75.8
1943	17	-	-	-	-	-	-	-	-	-	-	-	-
1942	18	-	-	-	-	-	-	3	3	6	93.0	77.0	85.0
Total ‰		510	490	1000				481	521	1002			
Serial Numbers			42						43,44,46,48				
Number of Samples			1						4				
Number of Fish Aged			100						398				
Mean Age			8.9						8.3				
Mean Weight (Kg)													
Total Wt Landed (Tons)													
Estimated No. Landed													
Mesh Size (mm)			114						114				
Range of Depths (m)			146						201-310				

[1] The length frequencies of these samples are given in Table 17; the age/length frequencies are given in Table 37.

(cont'd.)

TABLE 29 PORTUGAL - 1960 AGE FREQUENCIES - COD[1)] by Mario J. Ruivo
(cont'd.) by sexes, with mean length at each age Glicinia V. Quartin
OTTER TRAWLERS - Commercial Catches before Discarding

Division		4Vn											
Month		February						March					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	10	5	15	38.5	38.0	38.3	10	-	10	38.0	-	38.0
1956	4	40	75	115	43.5	45.5	44.5	120	30	150	43.4	42.7	43.1
1955	5	120	80	200	46.6	49.0	47.8	100	60	160	48.5	51.2	49.9
1954	6	160	120	280	53.3	55.0	54.1	260	90	350	51.9	53.6	52.8
1953	7	80	80	160	56.1	58.6	57.3	130	120	250	56.0	56.3	56.2
1952	8	55	50	105	60.5	62.5	61.5	30	20	50	60.3	60.5	60.4
1951	9	35	10	45	67.8	66.0	66.9	20	-	20	58.0	-	58.0
1950	10	20	5	25	66.0	62.0	64.0	-	-	-	-	-	-
1949	11	25	15	40	69.8	75.3	72.5	-	-	-	-	-	-
1948	12	5	-	5	73.0	-	73.0	-	10	10	-	66.0	66.0
1947	13	5	5	10	75.0	68.0	71.5	-	-	-	-	-	-
Total ‰		555	445	1000				670	330	1000			
Serial Numbers		21-23						24					
Number of Samples		2						1					
Number of Fish Aged		200						100					
Mean Age		6.4						6.0					
Mean Weight (Kg)													
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)		114						114					
Range of Depths (m)		160-200						150					

1) The length frequencies of these samples are given in Table 17.

(cont'd.)

TABLE 29 PORTUGAL - 1960 (cont'd.) AGE FREQUENCIES - COD[1] by sexes, with mean length at each age by Mario J. Ruivo Glicinia V. Quartin

OTTER TRAWLERS - Commercial Catches before Discarding

Division		4Vn					
Month		April					
Year-		‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	-	10	10	-	48.0	48.0
1956	4	15	10	25	48.7	47.5	48.1
1955	5	95	65	160	48.7	49.9	49.3
1954	6	155	175	330	53.0	53.3	53.2
1953	7	145	145	290	55.3	56.0	55.6
1952	8	70	45	115	59.0	58.5	58.7
1951	9	10	20	30	59.0	58.7	58.8
1950	10	15	10	25	64.0	67.0	65.5
1949	11	-	-	-	-	-	-
1948	12	-	5	5	-	69.0	69.0
1947	13	5	5	10	69.0	55.0	62.0
Total ‰		510	490	1000			
Serial Numbers			25-27				
Number of Samples			2				
Number of Fish Aged			200				
Mean Age			6.6				
Mean Weight (Kg)							
Total Wt.Landed(Tons)							
Estimated No. Landed							
Mesh Size (mm)			114				
Range of Depths (m)			150				

[1] The length frequencies of this sample are given in Table 17.

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960

AGE FREQUENCIES - COD[1)]
by sexes,
with mean length at each age

by V.I.Travin
E.M.Mankevich

OTTER TRAWLERS - Exploratory Catches

Division		1C											
Month		April						May					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	4	1	5	38.29	37.00	37.99	-	-	-	-	-	-
>1956	<4	-	-	-	-	-	-	25	12	37	37.06	37.42	37.15
1956	4	35	25	60	50.02	51.68	50.68	48	39	87	46.96	52.24	49.00
1955	5	89	79	168	58.15	60.52	59.35	88	38	126	56.44	57.91	56.83
1954	6	99	141	240	65.35	69.58	65.53	141	37	178	62.98	64.24	63.28
1953	7	142	252	394	69.64	70.75	70.42	284	126	410	68.38	71.14	69.37
1952	8	21	14	35	67.51	75.43	72.46	31	21	52	70.06	76.06	72.22
1951	9	40	-	40	77.11	-	77.11	14	13	27	78.91	83.14	80.89
1950	10	-	18	18	-	76.00	76.00	35	12	47	76.03	85.27	78.61
1949	11	-	-	-	-	-	-	-	-	-	-	-	-
1948	12	-	-	-	-	-	-	10	2	12	79.72	79.00	79.51
1947	13	13	-	13	82.00	-	82.00	2	3	5	79.00	76.00	77.14
1946	14	-	-	-	-	-	-	-	3	3	-	85.00	85.00
1945	15	-	-	-	-	-	-	5	3	8	86.38	85.00	85.87
1944	16	-	6	6	-	85.00	85.00	3	-	3	82.00	-	82.00
<1944	>16	10	11	21	92.74	93.85	93.34	3	2	5	98.17	97.51	97.99
Total ‰		453	547	1000				689	311	1000			
Serial Numbers													
Number of Samples			1						1				
Number Fish Measured			1962						4900				
Mean Age			6.6						6.6				
Mean Weight (Kg)			2.44						2.78				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)													
Range of Depths (fm)			82-148						36-120				

1)The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE FREQUENCIES - COD[1] by sexes, with mean length at each age

by V.I.Travin
E.M.Mankevich

OTTER TRAWLERS - Exploratory Catches

Division		1C						1D					
Month		June						April					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
>1957	<3	-	1	1	31.00	31.00	31.00	1	1	2	33.58	31.90	32.59
1957	3	60	53	113	39.22	38.50	38.89	5	5	10	40.66	41.29	40.93
1956	4	65	67	132	46.81	47.35	47.08	206	174	380	47.89	48.10	47.98
1955	5	110	104	214	58.30	58.00	58.18	63	52	115	56.50	56.50	56.50
1954	6	75	124	199	66.82	67.09	67.00	56	82	138	63.88	65.95	65.11
1953	7	66	174	240	70.78	73.90	73.09	112	157	269	69.52	72.22	71.11
1952	8	7	38	45	73.00	78.28	77.50	18	27	45	71.23	76.57	74.47
1951	9	6	19	25	79.00	84.19	82.18	8	5	13	76.24	76.27	76.24
1950	10	9	-	9	79.00	-	79.00	3	8	11	79.00	77.35	77.86
<1950	>10	10	12	22	86.59	88.15	87.43	-	-	-	-	-	-
1949	11	-	-	-	-	-	-	3	4	7	70.00	79.00	74.74
1948	12	-	-	-	-	-	-	-	-	-	-	-	-
1947	13	-	-	-	-	-	-	-	4	4	-	88.00	88.00
1946	14	-	-	-	-	-	-	-	-	-	-	-	-
1945	15	-	-	-	-	-	-	-	2	2	-	79.00	79.00
<1945	>15	-	-	-	-	-	-	2	2	4	97.24	97.93	97.63
Total ‰		408	592	1000				477	523	1000			
Serial Numbers													
Number of Samples			2						2				
Number Fish Measured			3546						6289				
Mean Age			5.7						5.6				
Mean Weight (Kg)			1.54						1.90				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)													
Range of Depths (fm)			33-109						33-205				

[1] The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE FREQUENCIES - COD[1)] by sexes, with mean length at each age

by V.I.Travin
E.M.Mankevich

OTTER TRAWLERS - Exploratory Catches

Division		1D						1E					
Month		May						May					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
>1957	<3	-	-	-	31.00	31.00	31.00	-	-	-	-	-	-
1957	3	37	34	71	39.34	47.71	44.14	-	-	-	-	-	-
>1956	<4	-	-	-	-	-	-	1	1	2	32.50	32.50	32.50
1956	4	195	143	338	48.58	48.64	48.61	84	100	184	45.22	44.80	44.98
1955	5	44	35	79	59.11	58.87	59.02	10	9	19	57.58	50.95	54.43
1954	6	80	86	166	65.59	67.72	66.64	53	35	88	65.08	66.70	65.62
1953	7	94	155	249	71.74	71.92	71.86	168	108	276	70.84	71.65	71.14
1952	8	23	35	58	75.64	76.75	76.33	43	32	75	75.67	71.80	73.63
1951	9	7	8	15	76.63	81.40	79.18	42	23	65	77.47	80.86	78.67
1950	10	3	11	14	83.32	84.64	84.34	88	32	120	79.42	77.74	78.88
1949	11	1	2	3	79.00	82.00	81.13	14	12	26	84.91	83.44	84.19
1948	12	1	1	2	79.00	85.00	82.30	41	47	88	81.16	83.14	82.27
1947	13	-	3	3	-	88.69	88.69	21	22	43	80.89	82.15	81.58
1946	14	-	1	1	-	88.00	88.00	5	8	13	89.08	82.87	85.30
<1946	>14	-	-	-	-	-	-	1	-	1	103.00	103.00	103.00
1945	15	1	-	1	85.00	-	85.00	-	-	-	-	-	-
<1945	>15	-	-	-	100.00	100.00	100.00	-	-	-	-	-	-
Total ‰		486	514	1000				571	429	1000			
Serial Numbers													
Number of Samples			3						1				
Number Fish Measured			14086						2182				
Mean Age			5.6						7.8				
Mean Weight (Kg)			2.80						3.18				
Total Wt Landed (Tons)													
Estimated No. Landed													
Mesh Size (mm)													
Range of Depths (fm)			22-113						44-208				

1)The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE FREQUENCIES - COD[1)] by sexes, with mean length at each age

1F by V.I.Travin, E.M.Mankevich

OTTER TRAWLERS - Exploratory Catches

2J by V.I.Travin

Division		1F						2J					
Month		April						May					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	7	-	7	41.50	-	41.50	4	8	12	31.00	25.00	26.32
1956	4	268	258	526	43.33	42.61	43.00	18	20	38	37.84	31.66	33.82
1955	5	77	74	151	49.51	49.42	49.48	17	27	44	40.30	42.58	41.83
1954	6	13	20	33	58.00	60.50	59.50	31	49	80	44.47	46.69	45.88
1953	7	90	67	157	64.00	63.10	63.61	60	87	147	48.46	48.91	48.73
1952	8	23	37	60	69.58	69.19	69.34	62	73	135	50.41	51.73	51.13
1951	9	23	7	30	73.42	77.50	74.35	66	65	131	53.95	53.59	53.74
1950	10	10	23	33	76.00	76.42	76.30	48	65	113	52.21	55.78	54.16
1949	11	-	3	3	-	73.00	73.00	35	66	101	54.64	56.62	55.87
1948	12	-	-	-	-	-	-	35	27	62	56.23	60.25	57.82
1947	13	-	-	-	-	-	-	15	21	36	60.79	61.00	60.88
1946	14	-	-	-	-	-	-	25	21	46	63.31	61.45	62.38
1945	15	-	-	-	-	-	-	24	10	34	62.17	64.27	62.71
1944	16	-	-	-	-	-	-	7	7	14	65.35	69.22	67.33
1943	17	-	-	-	-	-	-	3	2	5	67.00	71.77	69.70
1942	18	-	-	-	-	-	-	-	2	2	-	69.28	69.28
1941	19	-	-	-	-	-	-	-	-	-	-	-	-
1940	20	-	-	-	-	-	-	-	-	-	-	106.00	106.00
Total ‰		511	489	1000				450	550	1000			
Serial Numbers													
Number of Samples		1						14					
Number Fish Measured		299						17241					
Mean Age		5.30						9.12					
Mean Weight (Kg)		1.40						1.35					
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)													
Range of Depths (fm)		77-82						123-253					

1)The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE FREQUENCIES - COD[1] by sexes, with mean length at each age

by V.I.Travin

OTTER TRAWLERS - Exploratory Catches

Division		2J											
Month		June						November					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1958	2	-	4	4	-	31.30	31.30	-	-	-	-	-	-
1957	3	55	53	108	27.46	27.97	27.73	-	-	-	-	-	-
1956	4	35	49	84	34.90	36.22	35.74	26	44	70	45.79	44.29	44.86
1955	5	41	36	77	43.60	46.06	44.83	76	81	157	49.66	51.58	50.56
1954	6	68	63	131	45.54	47.62	47.05	71	67	138	52.06	53.02	52.54
1953	7	88	39	127	49.36	52.45	50.50	32	117	149	57.49	57.49	57.49
1952	8	80	76	156	53.98	53.44	54.40	45	94	139	59.36	60.76	60.01
1951	9	39	39	78	56.80	58.63	57.85	54	63	117	59.74	60.88	60.31
1950	10	23	14	37	57.04	64.21	59.74	15	44	59	60.22	61.36	61.09
1949	11	33	26	59	57.28	57.61	57.46	34	56	90	62.29	63.37	62.98
1948	12	28	18	46	58.45	60.85	59.32	19	22	41	62.71	66.64	64.81
1947	13	10	25	35	58.00	62.86	61.48	12	8	20	67.39	67.06	67.21
1946	14	14	20	34	61.00	65.50	63.61	12	4	16	63.28	67.00	63.94
1945	15	-	16	16	-	62.72	62.72	-	-	-	-	-	-
1944	16	3	-	3	60.42	-	60.42	-	-	-	-	-	-
1943	17	-	4	4	-	67.00	67.00	-	4	4	-	73.00	73.00
-	-	-	-	-	-	-	-	-	-	-	-	-	-
1937	23	-	1	1	-	79.00	79.00	-	-	-	-	-	-
Total ‰		517	483	1000				396	604	1000			
Serial Numbers													
Number of Samples			26						77				
Number Fish Measured			5910						4972				
Mean Age			7.56						7.72				
Mean Weight (Kg)			1.50						2.04				
Mean Length (cm)			49.36						56.83				
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)													
Range of Depths (fm)			97-266						77-296				

[1] The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE FREQUENCIES - COD[1] by sexes, with mean length at each age

by V.I.Travin

OTTER TRAWLERS - Exploratory Catches

Division		2J						3K					
Month		December						February					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1958	2	-	-	-	-	-	-	1	-	1	22.00	-	22.00
1957	3	3	7	10	41.50	41.50	41.50	14	11	25	32.66	34.00	33.70
1956	4	36	39	75	41.98	43.24	42.80	28	42	70	39.58	41.86	40.66
1955	5	88	95	183	49.03	51.52	50.35	162	107	269	48.43	47.92	48.25
1954	6	61	99	160	55.81	54.61	55.27	89	54	143	51.49	54.16	52.48
1953	7	39	58	97	57.43	58.09	57.79	75	50	125	54.07	56.98	55.27
1952	8	57	78	135	57.88	61.54	60.13	81	59	140	60.16	62.44	61.15
1951	9	33	38	71	59.86	60.94	60.49	28	-	28	59.38	-	59.38
1950	10	49	54	103	62.02	64.42	63.37	23	23	46	68.20	65.04	66.16
1949	11	34	17	51	61.57	64.63	62.53	7	-	7	79.00	-	79.00
1948	12	20	49	69	65.95	71.08	70.30	24	6	30	77.97	64.00	74.11
1947	13	8	4	12	64.00	67.00	64.96	50	60	110	72.73	73.15	73.09
1946	14	16	4	20	61.67	64.00	62.17	-	-	-	-	-	-
1945	15	4	4	8	64.00	64.00	64.00	-	6	6	-	88.00	88.00
1944	16	6	-	6	70.00	-	70.00	-	-	-	-	-	-
Total ‰		454	546	1000				582	418	1000			
Serial Numbers													
Number of Samples		31						16					
Number Fish Measured		1934						1593					
Mean Age		7.67						7.218					
Mean Weight (Kg)		1.68						1.64					
Mean Length (cm)		57.16						55.66					
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)													
Range of Depths (fm)		134-225						151-192					

[1] The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE FREQUENCIES - COD[1] by sexes, with mean length at each age

by V.I.Travin

OTTER TRAWLERS - Exploratory Catches

Division		3K						3M					
Month		June						March					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1957	3	24	16	40	28.60	27.50	28.27	-	-	-	-	-	-
1956	4	59	62	121	36.73	36.19	36.46	-	-	-	-	-	-
1955	5	68	51	119	45.49	45.64	45.64	21	8	29	47.80	47.29	47.56
1954	6	73	73	146	48.55	48.70	48.61	308	156	464	51.73	53.29	52.02
1953	7	61	67	128	54.73	53.98	54.37	149	93	242	53.92	57.55	55.09
1952	8	46	54	100	53.08	57.04	55.33	12	6	18	59.20	58.00	58.81
1951	9	29	52	81	58.48	60.67	59.53	26	14	40	59.29	67.15	61.12
1950	10	17	47	64	57.76	60.94	60.10	28	12	40	62.32	62.71	62.35
1949	11	23	40	63	58.69	59.23	59.68	50	55	105	63.85	67.18	65.56
1948	12	18	40	58	62.92	64.57	63.88	8	11	19	71.25	69.45	69.55
1947	13	12	23	35	66.37	64.96	65.41	-	18	18	-	69.20	69.34
1946	14	6	15	21	58.00	65.92	64.18	6	12	18	78.14	82.62	81.13
1945	15	4	6	10	67.00	67.55	67.33	3	1	4	75.25	85.00	76.43
1944	16	6	6	12	68.50	67.55	68.26	-	2	2	-	101.00	101.00
1943	17	2	-	2	64.00	-	64.00	-	1	1	-	115.00	115.00
Total ‰		448	552	1000				611	389	1000			
Serial Numbers													
Number of Samples			7						20				
Number Fish Measured			1582						1721				
Mean Age			7.77						7.51				
Mean Weight (Kg)			1.68						2.54				
Mean Length (cm)			51.73						56.50				
Total Wt Landed (Tons)													
Estimated No. Landed													
Mesh Size (mm)													
Range of Depths (fm)			90-217						125-236				

[1] The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE FREQUENCIES - COD[1] by sexes, with mean length at each age

by V.I.Travin

OTTER TRAWLERS - Exploratory Catches

Division		3M						3N					
Month		July											
Year-		°/oo Frequency			Mean Length			°/oo Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1958	2	14	21	35	26.95	26.83	26.80	193	150	343	21.88	21.46	21.64
1957	3	51	52	103	34.66	36.55	35.65	212	75	287	25.18	25.42	25.27
1956	4	51	34	85	42.88	43.90	43.30	35	17	52	41.29	44.71	42.61
1955	5	7	30	37	49.00	50.05	50.02	33	59	92	51.01	54.13	53.38
1954	6	172	168	340	53.71	55.57	54.70	14	26	40	60.50	62.08	61.54
1953	7	105	126	231	55.06	55.51	55.27	16	31	47	67.60	69.76	68.70
1952	8	12	12	24	55.73	58.00	56.61	21	26	47	73.57	72.49	72.85
1951	9	19	-	19	59.05	-	59.45	5	2	7	79.00	76.00	77.00
1950	10	12	13	25	62.37	56.20	60.50	7	-	7	86.00	-	86.00
1949	11	45	24	69	63.34	55.00	62.17	14	19	33	72.25	90.34	85.85
1948	12	7	20	27	61.00	67.00	65.36	-	-	-	-	-	-
1947	13	-	5	5	-	76.00	76.00	2	10	12	70.00	197.00	91.60
1946	14	-	-	-	-	-	-	9	-	9	101.50	-	101.50
1945	15	-	-	-	-	-	-	-	5	5	-	115.00	115.00
1944	16	-	-	-	-	-	-	7	-	7	91.00	-	91.00
1942	17	-	-	-	-	-	-	-	12	12	-	109.00	109.00
Total °/oo		495	505	1000				568	432	1000			
Serial Numbers													
Number of Samples		41						4					
Number Fish Measured		1648						425					
Mean Age		6.60						4.34					
Mean Weight (Kg)		1.50						...					
Mean Length (cm)		51.73						39.28					
Total Wt.Landed(Tons)													
Estimated No. Landed													
Mesh Size (mm)													
Range of Depths (fm)		94-283						111-198					

[1] The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE FREQUENCIES - COD[1] by sexes, with mean length at each age

by V.I.Travin

OTTER TRAWLERS - Exploratory Catches

Division		3N						3P					
Month		September						January					
Year-		‰ Frequency			Mean Length			‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1956	4	54	76	130	48.01	49.07	48.13	35	71	106	46.00	42.79	43.75
1955	5	351	362	713	55.03	54.64	54.73	389	283	672	49.21	49.78	49.45
1954	6	66	51	117	58.66	58.72	58.78	65	37	102	56.26	57.85	56.71
1953	7	8	13	21	70.00	62.80	65.50	29	8	37	64.45	69.12	65.44
1952	8	-	11	11	-	71.00	68.20	23	28	51	69.82	63.82	66.49
1951	9	-	2	2	-	94.00	94.00	6	6	12	73.00	66.58	70.09
1950	10	-	-	-	-	-	-	9	7	16	75.25	80.50	78.01
1949	11	-	-	-	-	-	-	-	-	-	-	-	-
1948	12	4	-	4	73.00	-	73.00	-	-	-	-	-	-
1947	13	-	-	-	-	-	-	2	-	2	85.00	-	85.00
1946	14	-	2	2	-	106.00	106.00	-	-	-	-	-	-
1945	15	-	-	-	-	-	-	-	2	2	-	73.00	73.00
Total ‰		483	517	1000				558	442	1000			
Serial Numbers													
Number of Samples		10						8					
Number Fish Measured		467						2335					
Mean Age		5.12						4.96					
Mean Weight (Kg)		1.66						1.49					
Mean Length (cm)		55.06						51.85					
Total Wt Landed (Tons)													
Estimated No. Landed													
Mesh Size (mm)													
Range of Depths (fm)		22-31						84-159					

[1] The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

(cont'd.)

TABLE 30 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE FREQUENCIES - COD[1] by sexes, with mean length at each age

by V.I.Travin

OTTER TRAWLERS - Exploratory Catches

Division		3P					
Month		February					
Year-		‰ Frequency			Mean Length		
Class	Age	♂♂	♀♀	Tot.	♂♂	♀♀	Tot.
1958	2	-	4	4	-	25.00	25.00
1957	3	62	45	107	32.14	32.24	32.29
1956	4	136	173	309	41.92	41.08	41.44
1955	5	196	310	506	47.95	48.31	48.10
1954	6	29	9	38	55.51	50.50	54.55
1953	7	9	7	16	66.40	64.00	65.33
1952	8	9	4	13	77.50	79.00	77.28
1951	9	4	3	7	73.00	70.00	70.75
Total ‰		445	555	1000			
Serial Numbers							
Number of Samples			9				
Number Fish Measured			550				
Mean Age			4.61				
Mean Weight (Kg)			0.87				
Mean Length (cm)			45.34				
Total Wt.Landed (Tons)							
Estimated No. Landed							
Mesh Size (mm)							
Range of Depths (fm)			57-185				

[1] The length frequencies of these samples are given in Table 19; the age/length frequencies are given in Table 38.

TABLE 31 DENMARK (Greenland) – 1960 AGE/LENGTH KEY – COD[1] by Paul M. Hansen

West Greenland (Banks) – Research Catches Serial No. 1

Location	IB – Store Hellefiske Bank – 66°40'N, 54°25'W												
Gear	Handline												
Month	July												
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	–	1947	1946	1945	Total
Age	3	4	5	6	7	8	9	10	–	13	14	15	
3-cm group	ACTUAL NUMBERS OF OTOLITHS READ												
33-35	1	–	–	–	–	–	–	–	–	–	–	–	1
36-38	–	–	–	–	–	–	–	–	–	–	–	–	–
39-41	4	–	–	–	–	–	–	–	–	–	–	–	4
42-44	6	1	–	–	–	–	–	–	–	–	–	–	7
45-47	2	3	1	–	–	–	–	–	–	–	–	–	6
48-50	–	5	1	1	–	–	–	–	–	–	–	–	7
51-53	–	11	3	–	–	–	–	–	–	–	–	–	14
54-56	–	13	4	–	1	–	–	–	–	–	–	–	18
57-59	–	7	14	–	–	–	–	–	–	–	–	–	21
60-62	–	1	27	1	2	–	–	–	–	–	–	–	31
63-65	–	–	13	7	6	–	–	–	–	–	–	–	26
66-68	–	–	10	7	6	–	–	–	–	–	–	–	23
69-71	–	–	2	4	24	2	1	–	–	–	–	–	33
72-74	–	–	–	3	19	3	–	–	–	–	–	–	25
75-77	–	–	–	1	9	4	–	–	–	–	–	–	14
78-80	–	–	–	–	2	2	2	3	–	–	–	–	9
81-83	–	–	–	–	5	–	–	2	–	1	–	–	8
84-86	–	–	–	–	2	–	1	–	–	–	–	–	3
87-89	–	–	–	–	–	–	–	1	–	–	–	1	2
90-92	–	–	–	–	–	–	–	–	–	1	–	–	1
Total Number	13	41	75	24	76	11	4	6	–	2	–	1	253
Mean Length (cm)													64.2

[1] The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	1
Number of Fish	253
Mean Age	5.9
Mean Length (cm)	64.2
Range of Depths (fm)	ca. 27.3

TABLE 31 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Banks) - Research Catches Serial No. 1a

Location	1B - Store Hellefiske Bank - 66°40'N, 54°25'W																	
Gear	Longline																	
Month	July																	
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																	
42-44	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
45-47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48-50	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
51-53	-	2	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
54-56	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
57-59	-	-	17	-	1	-	-	-	-	-	-	-	-	-	-	-	-	18
60-62	-	-	23	8	-	-	-	-	-	-	-	-	1	-	-	-	-	32
63-65	-	-	12	7	8	1	-	-	-	-	-	-	-	-	-	-	-	28
66-68	-	-	2	3	16	1	-	1	-	-	1	-	-	-	-	-	-	24
69-71	-	-	1	9	23	1	1	-	-	-	-	-	-	-	-	-	-	35
72-74	-	-	1	1	18	7	2	4	-	-	-	-	-	-	-	-	-	33
75-77	-	-	-	-	13	6	2	3	-	-	3	-	1	-	-	-	-	28
78-80	-	-	-	-	6	3	1	4	1	1	3	-	1	-	-	-	-	20
81-83	-	-	-	-	1	1	-	4	-	-	4	1	-	-	-	1	-	12
84-86	-	-	-	-	-	1	1	2	-	-	3	-	1	1	-	-	-	9
87-89	-	-	-	-	-	-	-	-	-	2	8	-	1	1	-	-	-	12
90-92	-	-	-	-	-	-	-	-	-	-	4	1	1	1	-	2	-	9
93-95	-	-	-	-	-	-	-	-	-	1	-	-	2	1	1	-	-	5
96-98	-	-	-	-	-	-	-	1	-	-	3	1	-	-	-	-	1	6
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
102-104	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	2
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Total Number	1	9	62	28	86	21	7	19	1	4	30	3	8	5	1	5	1	291
Mean Length (cm)																		79.3

1)The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	1a
Number of Fish	291
Mean Age	8.1
Mean Length (cm)	79.3
Mean Weight (Kg)	3.9
Range of Depths (fm)	25-74

TABLE 31 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1] by Paul M. Hansen
(cont'd.)

West Greenland (Banks) - Research Catches Serial No. 2

Location	1C - Lille Hellefiske Bank - 65°06'N, 54°02'W														
Gear	Handline														
Month	July														
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	Total
Age	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ														
60-62	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
63-65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66-68	1	6	2	-	1	-	-	-	-	-	-	-	-	-	10
69-71	-	4	12	-	-	-	-	-	-	-	-	-	-	-	16
72-74	-	4	12	7	-	3	-	-	1	-	-	-	-	-	27
75-77	-	1	14	5	4	4	-	1	4	-	-	-	-	-	33
78-80	-	-	12	6	4	10	1	2	6	-	1	-	-	-	42
81-83	-	-	6	3	5	14	-	1	7	-	-	-	1	-	37
84-86	-	-	1	-	2	6	1	1	10	-	2	-	-	-	23
87-89	-	-	-	1	1	7	-	1	3	-	1	-	-	1	15
90-92	-	-	-	-	1	-	1	1	3	-	2	-	-	2	10
93-95	-	-	-	-	-	-	-	-	1	1	-	-	-	-	2
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
99-101	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
Total Number	3	15	59	22	18	44	4	8	35	1	6	-	1	4	220
Mean Length (cm)															79.2

[1] The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	2
Number of Fish	220
Mean Age	9.5
Mean Length (cm)	79.2

TABLE 31 DENMARK (Greenland) – 1960 AGE/LENGTH KEY – COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Banks) – Research Catches Serial No. 3

Location	1C – Lille Hellefiske Bank – 65°07'N, 53°15'W															
Gear	Handline															
Month	July															
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	–	1942	1941	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	–	18	19	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ															
45–47	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
48–50	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
51–53	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
54–56	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
57–59	–	3	–	–	–	–	–	–	–	–	–	–	–	–	–	3
60–62	–	4	1	–	–	–	–	–	–	–	–	–	–	–	–	5
63–65	–	4	2	3	–	–	–	–	–	–	–	–	–	–	–	9
66–68	–	2	9	2	–	–	1	–	–	–	–	–	–	–	–	14
69–71	–	–	4	13	–	–	–	–	–	–	–	–	–	–	–	17
72–74	–	–	2	17	–	2	4	–	–	1	–	–	–	–	–	26
75–77	–	–	1	13	3	1	4	1	1	–	–	–	–	–	–	24
78–80	–	–	–	15	7	4	6	–	–	3	–	–	–	–	–	35
81–83	–	–	–	2	2	2	8	–	1	10	–	–	–	–	–	25
84–86	–	–	–	4	3	5	4	–	–	3	–	–	–	–	–	19
87–89	–	–	–	1	1	1	2	–	–	1	–	–	–	–	1	7
90–92	–	–	–	–	–	–	–	–	–	3	–	–	–	–	–	3
93–95	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
96–98	–	–	–	–	–	–	–	–	–	–	–	1	–	1	–	2
Total Number	4	13	19	70	16	15	29	1	2	21	–	1	–	1	1	193
Mean Length (cm)																74.7

[1)] The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	3
Number of Fish	193
Mean Length (cm)	74.7

TABLE 31 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Banks) - Research Catches Serial No. 2A

Location	1C - Lille Hellefiske Bank - 65°06'N, 54°02'W																	
Gear	Longline																	
Month	July																	
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939	Total
Age	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																	
57-59	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
60-62	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
63-65	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
66-68	3	6	3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	13
69-71	-	2	9	2	-	-	-	-	1	-	-	-	-	-	-	-	-	14
72-74	-	2	17	5	3	5	-	-	3	-	-	-	-	-	-	-	-	35
75-77	-	-	7	4	5	3	-	-	5	1	1	-	-	-	-	-	-	26
78-80	-	-	9	3	3	10	1	3	19	1	-	-	-	-	-	-	-	49
81-83	-	-	3	2	2	7	-	1	16	3	1	3	-	-	-	-	-	38
84-86	-	-	-	-	-	4	-	5	16	1	2	-	2	1	-	-	-	31
87-89	-	-	-	-	3	3	-	2	8	1	2	-	1	3	-	-	-	23
90-92	-	-	-	1	-	3	-	3	4	1	3	1	1	-	-	-	-	17
93-95	-	-	-	-	-	-	-	-	3	-	-	-	-	2	-	-	1	6
96-98	-	-	-	-	-	-	-	-	2	-	-	1	-	-	1	-	-	4
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
Total Number	10	10	48	17	16	36	1	14	78	8	9	5	4	6	1	-	1	264
Mean Length (cm)																		80.5

1) The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	2a
Number of Fish	264
Mean Age	10.7
Mean Length (cm)	80.5
Range of Depths (fm)	44-55

TABLE 31 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1)] by Paul M. Hansen

West Greenland (Banks) - Research Catches Serial No. 3a

Location	1C - Lille Hellefiske Bank - 65°07'N, 53°15'W																		
Gear	Longline																		
Month	July																		
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																		
42-44	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
45-47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48-50	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
51-53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54-56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57-59	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
60-62	-	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
63-65	-	-	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5
66-68	-	-	1	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5
69-71	-	-	1	1	7	-	-	-	-	-	-	-	-	-	-	-	-	-	9
72-74	-	-	-	2	9	2	1	2	-	-	-	-	-	-	-	-	-	-	16
75-77	-	-	-	-	9	1	2	4	-	-	4	1	-	-	-	-	-	-	21
78-80	-	-	-	-	4	3	-	3	-	1	2	-	1	-	-	-	-	-	14
81-83	-	-	-	-	2	3	3	4	1	2	5	1	1	-	-	-	-	-	22
84-86	-	-	-	-	-	2	4	5	-	2	11	1	2	-	1	-	-	-	28
87-89	-	-	-	-	-	-	-	4	-	2	6	1	1	-	-	-	-	-	14
90-92	-	-	-	-	-	-	-	1	-	-	3	2	-	-	-	1	-	-	7
93-95	-	-	-	-	-	-	-	1	-	-	2	2	-	-	-	-	-	-	5
96-98	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-	2
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
120-122	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
123-125	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	2
Total Number	1	1	8	10	33	11	10	25	1	7	35	8	7	1	2	1	1	1	163
Mean Length (cm)																			77.5

1)The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

SAMPLE DATA: Sample Serial Nos. - 3a; Number of Fish - 163; Mean Age - 10.1; Mean Length (cm) - 77.5; Range of Depths (fm) - 44-71.

(cont'd.)

TABLE 31 DENMARK (Greenland) - 1960 (cont'd.)

AGE/LENGTH KEY - COD[1)]

by Paul M. Hansen

West Greenland (Banks) - Research Catches

Serial No. 4

Location	1C - Banana Bank - 64°25'N, 53°13'W																
Gear	Handline																
Month	July																
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																
36-38	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
39-41	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
42-44	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
45-47	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
48-50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51-53	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
54-56	-	6	3	-	-	-	-	-	-	-	-	-	-	-	-	-	9
57-59	-	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	4
60-62	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	5
63-65	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	5
66-68	-	-	1	4	2	-	1	-	-	-	-	-	-	-	-	-	8
69-71	-	-	-	2	3	-	-	-	-	-	-	-	-	-	-	-	5
72-74	-	-	-	-	10	1	-	-	-	-	-	-	-	-	-	-	11
75-77	-	-	-	-	5	1	-	-	-	-	-	-	-	-	-	-	6
78-80	-	-	-	-	9	-	-	3	-	-	1	-	-	-	-	-	13
81-83	-	-	-	-	5	6	2	4	-	-	1	-	-	-	-	-	18
84-86	-	-	-	-	1	-	2	7	1	2	4	-	1	-	-	1	19
87-89	-	-	-	-	-	-	2	4	1	-	3	-	1	1	-	-	12
90-92	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3
93-95	-	-	-	-	-	-	-	1	-	2	2	-	-	1	-	-	6
96-98	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
99-101	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Total Number	8	14	14	9	35	8	7	19	2	4	17	-	2	2	-	1	142
Mean Length (cm)																	72.0

[1)] The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

SAMPLE DATA: Sample Serial Nos. - 4; Number of Fish - 142; Mean Age - 8.0; Mean Length (cm) - 72.0.

(cont'd.)

TABLE 31 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1)] by Paul M. Hansen

West Greenland (Banks) - Research Catches Serial No. 4A

Location	1C - Banana Bank - 64°25'N, 53°13'W																
Gear	Longline																
Month	July																
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																
39-41	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
42-44	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
51-53	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	5
54-56	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	4
57-59	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	6
60-62	-	-	9	2	-	-	-	-	-	-	-	-	-	-	-	-	11
63-65	-	-	3	8	-	-	-	-	-	-	-	-	-	-	-	-	11
66-68	-	-	1	5	6	-	-	-	-	-	-	-	-	-	-	-	12
69-71	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	7
72-74	-	-	-	4	13	2	2	-	-	-	-	-	-	-	-	-	21
75-77	-	-	-	-	14	2	1	-	-	1	1	-	-	-	-	-	19
78-80	-	-	-	-	6	4	3	5	-	1	1	-	-	-	1	-	21
81-83	-	-	-	-	3	2	3	6	-	1	9	1	-	-	-	1	26
84-86	-	-	-	-	4	1	1	8	2	1	4	1	-	-	-	-	22
87-89	-	-	-	-	-	-	1	3	1	-	4	-	-	-	-	-	9
90-92	-	-	-	-	-	-	-	1	-	1	7	-	2	-	-	-	11
93-95	-	-	-	-	-	-	-	1	-	1	3	-	-	-	-	-	5
96-98	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	5
99-101	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
102-104	-	-	-	-	-	-	-	-	-	-	3	-	1	-	1	-	5
Total Number	4	7	23	19	53	11	11	24	3	6	38	2	3	-	2	1	207
Mean Length (cm)																	76.3

1) The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

SAMPLE DATA: Sample Serial Nos. - 4a; Number of Fish - 207; Mean Age - 8.7; Mean Length (cm) - 76.3.

(cont'd.)

TABLE 31 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Banks) - Research Catches Serial No.8

Location	1D - Fylla Bank - 64°01'N, 52°26'W													
Gear	Handline													
Month	July													
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ													
42-44	2	-	-	-	-	-	-	-	-	-	-	-	-	2
45-47	-	1	-	-	-	-	-	-	-	-	-	-	-	1
48-50	-	5	-	-	-	-	-	-	-	-	-	-	-	5
51-53	-	16	-	-	-	-	-	-	-	-	-	-	-	16
54-56	-	17	1	1	-	-	-	-	-	-	-	-	-	19
57-59	-	9	8	-	-	-	-	-	-	-	-	-	-	17
60-62	-	2	21	6	1	-	-	-	-	-	-	-	-	30
63-65	-	-	22	12	3	-	-	-	-	-	-	-	-	37
66-68	-	1	11	14	13	2	-	1	-	-	-	-	-	42
69-71	-	-	4	10	20	1	-	1	-	-	-	-	-	36
72-74	-	-	-	2	32	3	3	5	-	1	3	-	-	49
75-77	-	-	-	2	26	6	4	4	-	-	1	-	-	43
78-80	-	-	-	-	13	4	1	2	-	1	1	1	-	23
81-83	-	-	-	-	3	3	2	5	1	2	9	2	-	27
84-86	-	-	-	-	1	-	-	-	1	1	3	-	1	7
87-89	-	-	-	-	-	1	1	1	-	-	-	-	1	4
90-92	-	-	-	-	-	-	-	-	1	-	-	-	-	1
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	1	-	-	-	-	-	-	1
99-101	-	-	-	-	-	-	-	1	1	-	-	-	-	2
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Number	2	51	67	47	112	20	12	20	4	5	17	3	3	363
Mean Length (cm)														69.1

1) The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	8
Number of Fish	363
Mean Age	6.9
Mean Length (cm)	69.1
Mean Weight (Kg)	3.0
Range of Depths (fm)	82-98

TABLE 31 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1)] by Paul M. Hansen

West Greenland (Banks) - Research Catches Serial No. 5

Location	1D - Fylla Bank - 64°03'N, 52°28'W															
Gear	Longline															
Month	February															
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ															
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
51-53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54-56	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	2
57-59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60-62	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	4
63-65	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	6
66-68	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	6
69-71	-	-	-	9	1	-	-	-	-	-	-	-	-	-	-	10
72-74	-	-	-	1	2	-	1	-	-	2	-	-	-	-	-	6
75-77	-	-	-	2	2	2	-	1	1	1	-	-	-	-	-	9
78-80	-	-	-	-	1	-	1	-	3	3	-	-	1	-	-	9
81-83	-	-	-	-	3	2	1	2	-	3	-	-	-	-	1	12
84-86	-	-	-	-	-	-	1	-	-	4	-	3	-	1	-	9
87-89	-	-	-	-	-	-	-	-	1	1	-	1	-	-	-	3
90-92	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
93-95	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
Total Number	1	2	4	25	9	4	4	3	5	16	-	5	1	1	1	81
Mean Length (cm)																71.8

[1)] The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

SAMPLE DATA: Sample Serial Nos. - 5; Number of Fish - 81; Mean Age - 9.7; Mean Length (cm) - 71.8; Mean Weight (Kg) - 4.307; Range of Depths (fm) - 49-68. (cont'd.)

TABLE 31 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Banks) - Research Catches Serial No. 6

Location	1D - Fylla Bank - 63°58'N, 53°28'W													
Gear	Longline													
Month	April													
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1934	Total
Age	5	6	7	8	9	10	11	12	13	14	15	-	26	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ													
54-56	-	1	-	-	-	-	-	-	-	-	-	-	-	1
57-59	2	1	-	-	-	-	-	-	-	-	-	-	-	3
60-62	-	3	5	-	-	-	-	-	-	-	-	-	-	8
63-65	-	1	21	-	-	-	-	-	-	-	-	-	-	22
66-68	-	3	19	-	-	-	-	-	-	-	-	-	-	22
69-71	-	1	26	2	-	-	-	-	-	-	-	-	-	29
72-74	-	-	30	6	4	2	-	-	1	-	-	-	-	43
75-77	-	-	7	3	-	-	-	-	4	-	-	-	-	14
78-80	-	-	6	-	1	2	-	-	2	1	-	-	-	12
81-83	-	-	1	2	-	4	-	1	-	-	1	-	-	9
84-86	-	-	-	1	1	3	-	1	1	-	-	-	-	7
87-89	-	-	-	-	-	1	-	-	1	1	-	-	-	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-	-	-	-	-	-	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Total Number	2	10	115	14	6	12	-	2	10	2	1	-	1	175
Mean Length (cm)														72.3

1) The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	6
Number of Fish	175
Mean Age	7.9
Mean Length (cm)	72.3
Mean Weight (Kg)	3.2
Range of Depths (fm)	46-82

TABLE 31 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1)] by Paul M. Hansen

West Greenland (Banks) - Research Catches Serial No. 8a

Location	1D - Fylla Bank - 64°01'N, 52°26'W																		
Gear	Longline																		
Month	July																		
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																		
39-41	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54-56	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
57-59	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
60-62	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
63-65	-	1	2	2	3	-	1	-	-	-	-	-	-	-	-	-	-	-	9
66-68	-	-	2	4	4	-	-	1	-	1	-	-	-	-	-	-	-	-	12
69-71	-	-	1	2	7	-	-	-	-	-	1	-	-	-	-	-	-	-	11
72-74	-	-	-	1	9	2	1	-	-	1	1	-	-	-	-	-	-	1	16
75-77	-	-	-	-	7	2	1	1	-	1	2	1	-	-	-	-	-	-	15
78-80	-	-	-	-	4	-	-	4	-	2	7	-	-	-	-	-	-	-	17
81-83	-	-	-	-	1	-	1	1	1	1	4	1	1	-	-	1	-	-	12
84-86	-	-	-	-	-	1	-	-	-	-	6	-	1	-	1	1	-	-	10
87-89	-	-	-	-	-	-	-	2	2	-	1	-	1	-	-	-	-	-	6
90-92	-	-	-	-	1	-	-	1	-	-	2	-	-	-	-	-	-	-	4
93-95	-	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	3
96-98	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	1	-	-	3
99-101	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	2
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Total Number	1	4	10	9	36	5	4	13	3	7	25	2	4	-	1	5	-	1	130
Mean Length (cm)																			75.7

1)The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

SAMPLE DATA: Sample Serial Nos. - 8a; Number of Fish - 130; Mean Age - 9.5; Mean Length (cm) - 75.6; Range of Depths (fm) - 82. (cont'd.)

TABLE 31 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1)] by Paul M. Hansen

West Greenland (Banks) - Research Catches Serial No. 9

Location	1D - Fylla Bank - 63°41'N, 52°24'W																	
Gear	Longline																	
Month	July																	
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																	
51-53	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63-65	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
66-68	-	-	1	2	2	-	-	-	-	-	-	-	-	-	-	-	-	5
69-71	-	-	-	7	-	-	-	-	-	-	-	-	-	1	-	-	-	8
72-74	-	-	1	6	-	-	1	-	-	3	-	-	-	1	-	-	1	13
75-77	-	-	-	5	-	-	4	-	1	2	-	-	-	-	2	-	-	14
78-80	-	-	-	4	-	1	3	-	5	6	1	-	-	-	1	-	-	21
81-83	-	-	-	-	-	3	4	-	-	5	2	1	1	1	1	-	-	18
84-86	-	-	-	-	-	-	5	-	1	8	1	-	-	1	-	-	-	16
87-89	-	-	-	-	-	-	2	-	3	3	-	1	-	-	-	-	-	9
90-92	-	-	-	-	-	-	1	-	-	4	-	1	1	-	1	-	-	8
93-95	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
96-98	-	-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	-	3
99-101	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	2
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	2
Total Number	1	-	3	24	2	4	20	-	10	34	4	5	2	4	8	-	1	122
Mean Length (cm)																		80.6

1)The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

SAMPLE DATA: Sample Serial Nos. - 9; Number of Fish - 122; Mean Age - 11.5; Mean Length (cm) - 80.6; (cont'd.)
Range of Depths (fm) - 38-55.

TABLE 31 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1)] by Paul M. Hansen

West Greenland (Banks) - Research Catches Serial No.10

Location	1D - Fiskenaes Bank - 63°28'N, 52°08'W									
Gear	Handline									
Month	July									
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	Total
Age	5	6	7	8	9	10	11	12	13	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ									
57-59	1	-	-	-	-	-	-	-	-	1
60-62	-	-	-	-	-	-	-	-	-	-
63-65	-	2	2	-	-	-	-	-	-	4
66-68	-	5	1	-	-	-	-	-	-	6
69-71	-	2	8	1	1	-	-	-	-	12
72-74	-	3	6	1	-	-	-	-	-	10
75-77	-	-	8	1	-	-	-	-	-	9
78-80	-	-	5	3	-	2	1	-	1	12
81-83	-	-	6	5	2	4	1	-	-	18
84-86	-	-	-	1	6	6	-	3	1	17
87-89	-	-	1	-	2	1	-	-	1	5
90-92	-	-	-	-	-	1	-	-	-	2
93-95	-	-	-	-	-	-	-	-	1	1
96-98	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	1	-	-	1	2
102-104	-	-	-	-	-	-	-	-	1	1
105-107	-	-	-	-	1	-	-	-	-	1
Total Number	1	12	37	12	12	15	2	3	7	101
Mean Length (cm)										76.3

1) The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	10
Number of Fish	101
Mean Age	8.3
Mean Length (cm)	76.3

TABLE 31 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Banks) - Research Catches Serial No.10a

Location	1D - Fiskenaes Bank - 63°28'N, 52°08'W															
Gear	Longline															
Month	July															
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1942	-	1939	Total
Age	5	6	7	8	9	10	11	12	13	14	15	-	18	-	21	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ															
51-53	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60-62	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
63-65	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3
66-68	3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	8
69-71	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	6
72-74	-	2	6	3	-	1	1	-	-	-	-	-	-	-	-	13
75-77	-	-	4	1	1	4	-	-	-	-	-	-	-	-	-	10
78-80	-	-	2	3	3	4	-	-	2	-	-	-	-	-	-	14
81-83	-	-	4	2	1	2	1	6	2	-	-	-	-	-	-	18
84-86	-	-	-	2	1	3	1	2	5	-	-	-	-	-	1	15
87-89	-	-	-	-	1	4	1	5	2	1	1	-	-	-	-	15
90-92	-	-	-	-	2	4	-	-	3	-	1	-	-	-	-	10
93-95	-	-	-	-	-	3	-	2	5	-	1	-	1	-	-	12
96-98	-	-	-	-	-	2	-	-	1	1	-	-	-	-	-	4
99-101	-	-	-	-	-	-	-	1	2	-	-	-	1	-	-	4
102-104	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	2
105-107	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
108-110	-	-	-	-	-	-	-	-	-	-	1	-	1	-	-	2
Total Number	6	8	23	12	9	27	4	16	24	2	4	-	4	-	1	140
Mean Length (cm)																83.4

[1)] The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	10a
Number of Fish	140
Mean Age	10.1
Mean Length (cm)	83.4
Range of Depths (fm)	33-44

TABLE 31 DENMARK (Greenland) - 1960
(cont'd.)

AGE/LENGTH KEY - COD[1])

by Paul M. Hansen

Location	West Greenland (Banks) - Research Catches												
Gear	Serial No.11												
Month	1D - Dana Bank - 62°49'N, 51°09'W												
Year-Class	Handline												
Age	August												
3-cm group	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
	4	5	6	7	8	9	10	11	12	13	14	15	
	ACTUAL NUMBER OF OTOLITHS READ												
48-50	1	-	-	-	-	-	-	-	-	-	-	-	1
51-53	4	-	-	-	-	-	-	-	-	-	-	-	4
54-56	-	-	-	-	-	-	-	-	-	-	-	-	-
57-59	-	1	-	-	-	-	-	-	-	-	-	-	1
60-62	-	1	-	1	-	-	-	-	-	-	-	-	2
63-65	-	-	-	-	-	-	-	-	-	-	-	-	-
66-68	-	-	3	4	-	-	-	-	-	-	-	-	7
69-71	-	-	1	8	3	-	-	-	-	-	-	-	14
72-74	-	-	1	6	4	1	4	-	-	1	-	-	19
75-77	-	-	-	10	4	5	4	1	-	1	2	-	30
78-80	-	-	-	4	1	1	7	-	1	6	-	-	26
81-83	-	-	-	3	3	5	5	-	1	10	-	2	23
84-86	-	-	-	2	2	2	8	-	-	3	2	1	23
87-89	-	-	-	2	-	3	4	1	-	6	-	3	14
90-92	-	-	-	-	-	1	5	-	2	4	-	-	10
93-95	-	-	-	-	-	-	1	-	-	1	-	1	2
96-98	-	-	-	-	-	-	2	-	-	1	-	-	7
99-101	-	-	-	-	-	-	1	1	1	4	1	-	3
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	-	-	1
Total Number	5	2	5	40	17	18	42	3	5	37	5	8	187
Mean Length (cm)													79.0

[1]) The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

SAMPLE DATA

Sample Serial Nos.	11
Number of Fish	187
Mean Age	9.7
Mean Length (cm)	79.0

(cont'd.)

TABLE 31 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Banks) - Research Catches Serial No.11a

Location	1D - Dana Bank - 62°49'N, 51°09'W														
Gear	Longline														
Month	August														
Year-Class	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	Total
Age	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ														
57-59	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
60-62	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
63-65	2	1	-	-	-	-	-	-	-	-	-	-	-	-	3
66-68	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
69-71	2	-	2	-	-	-	-	-	-	-	-	-	-	-	4
72-74	-	3	1	1	2	-	-	1	-	-	-	-	-	-	8
75-77	-	1	-	1	1	-	1	4	-	-	-	-	-	-	8
78-80	-	-	-	1	2	-	-	2	1	-	-	-	-	-	6
81-83	-	-	-	1	3	1	1	8	-	3	-	-	-	-	17
84-86	-	-	-	-	4	-	1	4	-	1	1	-	-	-	11
87-89	-	-	-	2	2	1	2	4	-	1	-	-	-	1	13
90-92	-	-	-	-	1	-	-	4	-	-	-	1	-	-	6
93-95	-	-	-	-	1	1	-	4	-	-	-	-	-	-	6
96-98	-	-	-	-	-	1	1	5	-	-	-	-	-	-	7
99-101	-	-	-	-	-	-	-	3	-	-	1	1	-	-	5
102-104	-	-	-	-	-	-	1	1	-	-	-	-	-	-	2
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
111-113	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
126-128	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Total Number	7	5	3	6	16	4	7	41	1	6	2	2	1	1	102
Mean Length (cm)															83.3

[1)] The length frequencies of these samples are given in Table 10; the age frequencies are given in Table 23.

SAMPLE DATA

Sample Serial Nos.	11a
Number of Fish	102
Mean Age	11.6
Mean Length (cm)	83.3
Range of Depths (fm)	33-44

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1] by Paul M. Hansen

West Greenland (Inshore and Fjords) - Research Catches Serial No. 33

Location	1D - Godthåb Fjord - 64°24'N, 50°23'W																		
Gear	Handline																		
Month	February																		
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																		
36-38	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
39-41	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
42-44	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
45-47	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
48-50	-	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
51-53	-	11	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
54-56	-	15	5	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	23
57-59	-	15	7	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	23
60-62	-	4	5	4	7	-	-	-	-	-	-	-	-	-	-	-	-	-	20
63-65	-	-	1	-	8	2	-	-	-	-	-	-	-	-	-	-	-	-	11
66-68	-	1	-	2	8	-	-	1	-	-	1	-	-	-	-	-	-	-	13
69-71	-	-	-	-	10	-	7	1	1	2	-	1	-	-	-	-	-	-	22
72-74	-	-	-	1	15	4	3	-	1	2	-	-	-	-	1	-	-	-	27
75-77	-	-	-	2	6	-	4	3	1	2	-	1	-	-	1	-	1	-	21
78-80	-	-	-	-	3	-	2	1	1	1	-	3	-	-	2	1	-	-	14
81-83	-	-	-	-	-	1	3	1	4	4	-	-	-	-	2	-	-	-	15
84-86	-	-	-	-	-	-	1	2	-	2	-	1	1	-	-	-	-	-	7
87-89	-	-	-	-	-	-	-	-	1	1	1	3	-	-	-	-	1	-	7
90-92	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
93-95	-	-	-	-	-	-	-	-	-	2	-	1	-	-	1	-	-	-	4
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Total Number	5	54	19	11	59	7	21	9	9	16	2	10	1	1	7	1	3	1	236
Mean Length (cm)																			67.8

[1]The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

SAMPLE DATA: Sample Serial Nos. - 33; Number of Fish - 236; Mean Age - 8.8; Mean Length (cm) - 67.8; (cont'd.)
Mean Weight (Kg) - 3.6; Range of Depths (fm) - 131.

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches Serial No. 34

Location	1D - Godthåb Fjord - 64°24'N, 50°23'W																		
Gear	Handline																		
Month	February																		
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939	1938	Total
Age	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																		
57-59	3	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
60-62	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
63-65	-	-	3	6	1	1	-	-	-	-	-	-	-	-	-	-	-	-	11
66-68	-	-	2	7	-	2	-	-	-	-	-	-	-	-	-	-	-	-	11
69-71	-	-	4	6	-	1	-	-	2	-	1	-	-	-	-	-	-	-	14
72-74	-	-	1	13	1	5	3	1	3	-	2	-	-	1	-	-	-	-	30
75-77	-	-	1	9	-	4	1	1	2	-	3	1	1	3	1	-	-	-	27
78-80	-	-	-	5	1	4	3	3	1	-	1	-	3	2	-	2	-	-	25
81-83	-	-	-	2	-	2	2	2	4	1	6	1	-	1	-	-	-	1	22
84-86	-	-	-	-	-	-	-	-	2	-	1	-	-	1	-	2	-	-	6
87-89	-	-	-	-	-	-	1	-	1	-	2	1	-	-	-	2	1	-	8
90-92	-	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	2
93-95	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	2
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Total Number	3	-	17	52	3	20	10	7	15	2	17	3	4	9	1	9	1	1	174
Mean Length (cm)																			75.4

1) The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

SAMPLE DATA: Sample Serial Nos. - 34; Number of Fish - 174; Mean Age - 10.9; Mean Length (cm) - 75.4; Mean Weight (Kg) - 4.5; Range of Depths (fm) - 131. (cont'd.)

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches Serial No. 35

Location	1D - Godthåb Fjord - 64°24'N, 50°23'W																	
Gear	Handline																	
Month	February																	
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	1939	Total
Age	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																	
54-56	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
57-59	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
60-62	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
63-65	-	-	1	4	-	1	-	1	-	-	-	-	-	-	-	-	-	7
66-68	-	1	-	9	1	-	1	-	1	-	-	-	-	-	-	-	-	13
69-71	-	-	-	6	-	4	2	-	-	-	-	-	-	-	-	-	-	12
72-74	-	-	-	7	-	2	1	2	-	-	-	-	-	-	-	1	-	13
75-77	-	-	-	3	1	4	-	-	1	-	1	-	-	3	-	-	1	14
78-80	-	-	1	2	-	3	1	-	3	-	2	-	-	-	-	1	-	13
81-83	-	-	-	-	-	-	2	1	-	-	-	-	1	1	1	-	-	6
84-86	-	-	-	-	-	2	1	-	-	1	1	-	-	-	-	-	-	5
87-89	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	2
90-92	-	-	-	-	-	-	1	-	1	-	2	-	-	-	-	-	1	5
Total Number	3	3	2	32	2	16	10	4	6	1	6	-	2	4	1	2	2	96
Mean Length (cm)																		73.9

[1)] The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

SAMPLE DATA: Sample Serial Nos. - 35; Number of Fish - 96; Mean Age - 10.7; Mean Length (cm) - 73.9; (cont'd.)
Mean Weight (Kg) - 4.5.

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches Serial No. 24

Location	ID- Godthåb Fjord - 64°12'N, 51°50'W											
Gear	Handline											
Month	April											
Year-Class	1957	1956	1955	1954	1953	1952	1951	-	1945	-	1942	Total
Age	3	4	5	6	7	8	9	-	15	-	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ											
30-32	3	-	-	-	-	-	-	-	-	-	-	3
33-35	12	-	-	-	-	-	-	-	-	-	-	12
36-38	15	1	1	-	-	-	-	-	-	-	-	17
39-41	5	5	-	-	-	-	-	-	-	-	-	10
42-44	-	5	-	-	-	-	-	-	-	-	-	5
45-47	-	14	2	-	-	-	-	-	-	-	-	16
48-50	-	16	-	-	-	-	-	-	-	-	-	16
51-53	-	9	3	-	-	-	-	-	-	-	-	12
54-56	-	3	1	-	1	-	-	-	-	-	-	5
57-59	-	-	5	-	-	-	-	-	-	-	-	5
60-62	-	-	4	-	1	-	-	-	-	-	-	5
63-65	-	-	1	5	1	-	-	-	-	-	-	7
66-68	-	-	-	1	-	-	-	-	-	-	-	1
69-71	-	-	-	-	4	3	-	-	-	-	-	7
72-74	-	-	-	1	1	-	-	-	-	-	-	2
75-77	-	-	-	1	1	1	-	-	1	-	-	4
78-80	-	-	-	-	-	-	-	-	-	-	-	-
81-83	-	-	-	-	2	-	1	-	-	-	-	3
-	-	-	-	-	-	-	-	-	-	-	-	-
90-92	-	-	-	-	-	1	-	-	-	-	1	2
Total Number	35	53	17	8	11	5	1	-	1	-	1	132
Mean Length (cm)												44.3

1)The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	24
Number of Fish	132
Mean Age	4.6
Mean Length (cm)	44.3
Mean Weight (Kg)	1.9
Range of Depths (fm)	38-49

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches Serial No. 32

Location	1D - Godthåb Fjord - 64°15'N, 50°53'W									
Gear	Handline									
Month	April									
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	Total
Age	3	4	5	6	7	8	9	10	11	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ									
30-32	-	1	-	-	-	-	-	-	-	1
33-35	-	-	-	-	-	-	-	-	-	-
36-38	4	1	-	-	-	-	-	-	-	5
39-41	-	9	-	-	-	-	-	-	-	9
42-44	-	4	-	-	-	-	-	-	-	4
45-47	-	6	-	-	-	-	-	-	-	6
48-50	-	10	2	-	-	-	-	-	-	12
51-53	-	9	7	1	-	-	-	-	-	17
54-56	-	1	1	-	-	-	-	-	-	2
57-59	-	-	1	2	1	-	-	-	-	4
60-62	-	-	1	2	1	-	-	-	-	4
63-65	-	-	-	-	-	-	-	-	-	-
66-68	-	-	-	1	-	-	-	-	1	2
69-71	-	-	-	-	-	-	-	-	-	-
72-74	-	-	-	-	-	-	-	2	-	2
75-77	-	-	-	-	-	1	-	-	-	1
78-80	-	-	-	-	-	2	-	-	-	2
Total Number	4	41	12	6	2	3	-	2	1	71
Mean Length (cm)										50.6

[1)] The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	32
Number of Fish	71
Mean Age	4.9
Mean Length (cm)	50.6
Range of Depths (fm)	33-55

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches Serial No. 36

Location	1D - Godthåb Fjord - 64°25'N, 50°23'W															
Gear	Handline															
Month	April															
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	-	1940	Total
Age	5	6	7	8	9	10	11	12	13	14	15	16	17	-	20	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ															
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51-53	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
54-56	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
57-59	12	2	-	-	-	-	-	-	-	-	-	-	-	-	-	14
60-62	14	1	-	1	-	-	-	-	-	-	-	-	-	-	-	16
63-65	5	2	5	5	-	-	-	-	-	-	-	-	-	-	-	17
66-68	-	1	3	2	-	4	-	-	-	-	-	-	-	-	-	10
69-71	-	-	-	13	2	-	1	1	-	-	-	-	-	-	1	18
72-74	-	-	1	3	-	5	1	-	1	-	3	-	-	-	-	14
75-77	-	-	-	2	-	3	1	-	1	-	1	1	-	-	-	9
78-80	-	-	1	-	1	3	-	1	2	-	-	-	-	-	-	8
81-83	-	-	-	1	-	-	3	-	-	1	-	-	1	-	-	6
84-86	-	-	-	-	-	2	-	-	2	-	-	-	-	-	-	4
87-89	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
90-92	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	2
Total Number	38	6	10	27	3	18	6	3	7	1	4	1	1	-	1	126
Mean Length (cm)																68.5

[1)] The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	36
Number of Fish	126
Mean Age	8.2
Mean Length (cm)	68.5

TABLE 32 DENMARK (Greenland) - 1960 (cont'd.)

AGE/LENGTH KEY - COD[1)]

by Paul M. Hansen

Location	West Greenland (Inshore and Fjords) - Research Catches											
Gear	1D - Godthåb Fjord - 64°07'N, 52°21'W Serial No. 25											
Month	Handline											
Year-Class	June											
Age	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	Total
3-cm group	3	4	5	6	7	8	9	10	11	12	13	
	ACTUAL NUMBER OF OTOLITHS READ											
36-38	2	-	-	-	-	-	-	-	-	-	-	2
39-41	5	2	-	-	-	-	-	-	-	-	-	7
42-44	4	7	-	-	-	-	-	-	-	-	-	11
45-47	1	23	-	-	-	-	-	-	-	-	-	24
48-50	1	50	2	-	-	-	-	-	-	-	-	53
51-53	1	55	2	-	-	-	-	-	-	-	-	57
54-56	-	25	3	-	-	-	-	-	-	-	-	28
57-59	-	2	6	-	-	-	-	-	-	-	-	8
60-62	-	1	8	2	1	-	-	-	-	-	-	12
63-65	-	1	1	1	-	-	-	-	-	-	-	3
66-68	-	1	1	-	1	-	-	-	-	-	-	3
69-71	-	-	1	-	-	-	-	-	-	-	-	1
72-74	-	-	-	2	1	-	-	-	-	-	-	4
75-77	-	-	-	-	2	1	-	1	-	-	-	3
78-80	-	-	-	-	1	-	2	-	-	-	-	3
81-83	-	-	-	-	1	-	-	-	-	-	-	2
84-86	-	-	-	-	-	-	-	-	-	1	-	1
Number	13	167	24	5	7	1	2	1	-	1	1	222
Length (cm)												52.8

[1)] length frequencies of these samples are given in Table 11; the age frequencies are
[illegible]n in Table 24.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	25
Number of Fish	222
Mean Age	4.4
Mean Length (cm)	52.8

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches Serial No. 27

Location	1D - Godthåb Fjord - 64°12'N, 51°42'W										
Gear	Handline										
Month	July										
Year-Class	1958	1957	1956	1955	1954	1953	1952	1951	-	1947	Total
Age	2	3	4	5	6	7	8	9		13	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ										
24-26	1	-	-	-	-	-	-	-	-	-	1
27-29	2	1	-	-	-	-	-	-	-	-	3
30-32	1	5	-	-	-	-	-	-	-	-	6
33-35	-	11	-	-	-	-	-	-	-	-	11
36-38	-	21	-	-	-	-	-	-	-	-	21
39-41	-	19	5	-	-	-	-	-	-	-	24
42-44	-	10	11	-	-	-	-	-	-	-	21
45-47	-	1	19	2	-	-	-	-	-	-	22
48-50	-	-	24	-	-	-	-	-	-	-	24
51-53	-	-	23	3	-	-	-	-	-	-	26
54-56	-	-	14	4	-	1	-	-	-	-	19
57-59	-	-	-	2	-	-	-	-	-	-	2
60-62	-	-	-	4	3	-	-	-	-	-	7
63-65	-	-	-	1	1	-	-	-	-	-	2
66-68	-	-	-	1	2	2	-	-	-	-	5
69-71	-	-	-	-	1	-	-	-	-	-	1
72-74	-	-	-	-	-	2	1	1	-	1	5
75-77	-	-	-	-	-	-	-	-	-	-	-
78-80	-	-	-	-	-	-	1	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-	-	-	1	1
Total Number	4	68	96	17	7	5	2	1	-	2	202
Mean Length (cm)											46.8

[1] The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	27
Number of Fish	202
Mean Age	4.0
Mean Length (cm)	46.8

TABLE 32 DENMARK (Greenland) - 1960 (cont'd.)

AGE/LENGTH KEY - COD[1]

by Paul M. Hansen

Location	West Greenland (Inshore and Fjords) - Research Catches						
Gear	1D - Godthåb Fjord - 64°08'N, 51°48'W						Serial No. 28
Month	Handline						
Year-Class	September						
Age	1957	1956	1955	1954	1953	1952	Total
3-cm group	3	4	5	6	7	8	
	ACTUAL NUMBER OF OTOLITHS READ						
30-32	2	-	-	-	-	-	2
33-35	3	-	-	-	-	-	3
36-38	11	-	-	-	-	-	11
39-41	41	2	-	-	-	-	43
42-44	37	4	-	-	-	-	41
45-47	24	9	-	-	-	-	33
48-50	6	29	1	-	-	-	36
51-53	-	15	1	-	-	-	16
54-56	-	7	1	-	-	-	8
57-59	-	5	3	1	-	-	9
60-62	-	1	5	1	-	-	7
63-65	-	-	-	-	-	-	-
66-68	-	-	1	1	-	-	5
69-71	-	-	2	1	2	1	3
72-74	-	-	-	-	-	-	1
-	-	-	-	-	-	1	-
81-83	-	-	-	-	-	3	1
Total Number	124	72	14	4	2	3	219
Mean Length (cm)							46.8

[1] The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

SAMPLE DATA

Sample Serial Nos.	28
Number of Fish	219
Mean Age	3.6
Mean Length (cm)	46.8
Mean Weight (Kg)	1.4

(cont'd.)

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches Serial No. 23

Location	1D - Godthåb Fjord - 64°03'N, 52°12'W															
Gear	Longline															
Month	April															
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ															
39-41	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
42-44	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	3
51-53	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
54-56	1	6	3	-	-	-	-	-	-	-	-	-	-	-	-	10
57-59	-	6	-	1	-	-	-	-	-	-	-	-	-	-	-	7
60-62	-	9	6	4	-	-	-	-	-	-	-	-	-	-	-	19
63-65	-	2	6	2	2	1	-	-	-	-	-	-	-	-	-	13
66-68	-	-	3	6	-	1	2	-	-	1	-	-	-	-	-	13
69-71	-	-	2	5	-	-	2	-	-	-	-	-	-	-	-	9
72-74	-	-	3	4	6	1	1	-	-	-	-	-	-	-	-	15
75-77	-	-	2	1	-	-	1	-	1	1	-	-	-	-	-	6
78-80	-	-	-	2	1	1	-	-	1	-	1	-	-	-	-	6
81-83	-	-	-	-	-	-	2	2	-	1	-	-	-	-	-	5
84-86	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	2
87-89	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
90-92	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	2
93-95	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1	2
96-98	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	2
Total Number	6	25	25	25	9	4	9	2	2	7	2	2	-	1	1	120
Mean Length (cm)																67.6

[1)] The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

SAMPLE DATA: Sample Serial Nos. - 23; Number of Fish - 120; Mean Age - 7.5; Mean Length (cm) - 67.6; Mean Weight (Kg) - 3.1; Range of Depths (fm) - 82. (cont'd.)

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches Serial No. 26

Location	1D - Godthåb Fjord - 64°06'N, 51°38'W																	
Gear	Longline																	
Month	July																	
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1942	1941	1940	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	-	18	19	20	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																	
33-35	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45-47	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51-53	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
54-56	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
57-59	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
60-62	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	5
63-65	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	2
66-68	-	-	-	1	3	-	-	-	-	-	-	-	-	-	-	-	-	4
69-71	-	-	1	1	3	2	-	1	-	-	-	-	-	-	-	-	-	8
72-74	-	-	-	-	6	6	1	2	-	-	-	-	-	-	-	-	-	15
75-77	-	-	-	-	5	2	-	-	-	1	-	-	-	-	-	-	-	8
78-80	-	-	-	-	2	1	1	1	-	-	1	-	-	-	-	-	-	6
81-83	-	-	-	-	-	2	1	1	-	2	1	-	-	-	-	-	-	7
84-86	-	-	-	-	-	1	-	3	-	-	2	-	-	-	-	-	-	6
87-89	-	-	-	-	-	-	-	3	-	-	1	1	-	-	-	-	-	5
90-92	-	-	-	-	-	1	-	1	-	-	-	-	-	-	1	-	-	3
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
96-98	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
99-101	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Total Number	1	4	4	4	20	16	3	12	-	3	6	2	1	-	1	-	1	78
Mean Length (cm)																		75.2

[1)] The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

SAMPLE DATA: Sample Serial Nos. - 26; Number of Fish - 78; Mean Age - 8.6; Mean Length (cm) - 75.2; (cont'd.)
Mean Weight (Kg) - 4.2; Range of Depths (fm) - 11-44.

TABLE 32 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1)] by Paul M. Hansen

West Greenland (Inshore and Fjords) - Research Catches Serial No. 29

Location	1D - Godthåb Fjord - 63°55'N, 51°30'W															
Gear	Longline															
Month	October															
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1942	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	-	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ															
39-41	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
42-44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48-50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51-53	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
54-56	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	4
57-59	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
60-62	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	3
63-65	-	-	3	4	-	-	-	-	-	-	-	-	-	-	-	7
66-68	-	-	3	7	3	1	1	-	-	-	-	-	-	-	-	15
69-71	-	-	1	2	8	1	-	2	-	-	-	-	-	-	-	14
72-74	-	1	-	3	3	-	2	4	-	-	4	-	-	-	-	17
75-77	-	-	-	1	3	1	1	3	-	4	5	1	-	-	-	19
78-80	-	-	-	-	2	-	1	9	1	-	5	-	-	-	1	19
81-83	-	-	-	-	2	3	2	6	-	-	8	-	-	-	-	21
84-86	-	-	-	-	2	-	-	5	-	1	5	-	-	-	-	13
87-89	-	-	-	-	1	-	-	-	-	1	6	-	-	-	-	8
90-92	-	-	-	-	-	1	-	-	-	-	1	-	1	-	1	4
93-95	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-	3
96-98	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	2
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
114-116	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
Total Number	2	7	8	19	24	7	7	31	1	6	37	2	3	-	2	156
Mean Length (cm)																76.2

1) The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

SAMPLE DATA: See page 124

(cont'd.)

TABLE 32 DENMARK (Greenland) – 1960 AGE/LENGTH KEY – COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) – Research Catches Serial No. 30

Location	1D – Godthåb Fjord – 64°06'N, 51°49'W															
Gear	Longline															
Month	November															
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	–	1942	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	–	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ															
42-44	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
45-47	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
48-50	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	2
51-53	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
54-56	–	2	–	–	–	–	–	–	–	–	–	–	–	–	–	2
57-59	–	2	2	–	–	–	–	–	–	–	–	–	–	–	–	4
60-62	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
63-65	–	–	2	1	1	–	–	–	–	–	–	–	–	–	–	4
66-68	–	–	1	1	1	1	–	–	–	–	–	–	–	–	–	4
69-71	–	–	1	1	5	–	1	–	–	–	–	–	–	–	–	8
72-74	–	–	1	2	5	2	–	1	–	–	–	–	–	–	–	11
75-77	–	–	1	–	7	2	2	1	–	1	2	–	1	–	–	17
78-80	–	–	–	–	–	2	3	1	1	–	1	–	–	–	1	9
81-83	–	–	–	–	–	1	–	4	–	1	–	–	1	–	–	7
84-86	–	–	–	–	–	1	–	2	–	–	3	–	–	–	–	6
87-89	–	–	–	–	–	–	–	1	1	–	2	–	–	–	–	4
90-92	–	–	–	–	–	–	–	3	–	–	1	–	–	–	–	4
93-95	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
96-98	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
99-101	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	1
–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
112-113	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Total Number	7	5	8	5	19	9	6	14	3	2	9	–	2	–	2	91
Mean Length (cm)																73.6

1)The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	30
Number of Fish	91
Mean Age	7.6
Mean Length (cm)	73.6
Mean Weight (Kg)	4.5
Range of Depths (fm)	27–60

SAMPLE DATA for Serial No.29, p.123: Sample Serial Nos. – 29; Number of Fish – 156; Mean Age – 9.3; Mean Length (cm) – 76.2; Mean Weight (Kg) – 4.8; Range of Depths (fm) – 55–115.

TABLE 32 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1)] by Paul M. Hansen

West Greenland (Inshore and Fjords) - Research Catches Serial No. 31

Location	1D - Godthåb Fjord - 64°07'N, 51°53'W																		
Gear	Longline																		
Month	November																		
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																		
42-44	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
45-47	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
48-50	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
51-53	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
54-56	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	2
57-59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60-62	-	1	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
63-65	-	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
66-68	-	-	4	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	7
69-71	-	-	2	-	4	-	-	-	1	-	3	-	-	-	-	-	-	-	10
72-74	-	-	-	1	9	5	1	1	-	1	2	-	-	-	-	-	-	-	20
75-77	-	-	-	-	10	5	-	4	-	1	5	-	1	-	-	-	-	-	26
78-80	-	-	-	-	3	1	-	5	-	2	-	-	-	1	-	-	-	-	12
81-83	-	-	-	-	3	3	2	2	-	1	5	1	1	-	1	1	-	1	21
84-86	-	-	-	-	1	1	-	4	-	-	3	-	1	1	-	-	-	-	11
87-89	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	1	-	1	4
90-92	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
93-95	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
96-98	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	1	-	-	4
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
Total Number	7	1	15	5	31	16	3	16	1	5	24	1	3	2	2	4	-	2	138
Mean Length (cm)																			75.1

[1)] The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

SAMPLE DATA: Sample Serial Nos. - 31; Number of Fish - 138; Mean Age - 9.3; Mean Length (cm) - 75.1; Mean Weight (Kg) - 4.6; Range of Depths (fm) - 164.

(cont'd.)

TABLE 32 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

West Greenland (Inshore and Fjords) - Research Catches

Location	1F Kitsigssut and Kap Egede 60°10'N, 45°28'W and 60°03'N, 45°08'W														
Gear	Handline														
Month	September														
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1942	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	-	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ														
42-44	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3
45-47	5	-	-	-	-	-	-	-	-	-	-	-	-	-	5
48-50	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4
51-53	11	1	-	-	-	-	-	-	-	-	-	-	-	-	12
54-56	9	3	-	-	-	-	-	-	-	-	-	-	-	-	12
57-59	1	5	1	-	-	-	-	-	-	-	-	-	-	-	7
60-62	-	1	1	3	-	-	-	-	-	-	-	1	-	-	6
63-65	-	-	2	12	1	-	-	-	-	-	-	-	-	-	15
66-68	-	-	1	20	6	1	1	1	-	-	-	-	-	-	30
69-71	-	-	-	17	6	5	5	-	-	1	1	-	-	-	35
72-74	-	-	-	3	9	6	4	1	-	5	-	-	-	-	28
75-77	-	-	-	5	5	5	8	1	-	8	-	-	-	-	32
78-80	-	-	-	2	4	3	9	2	1	6	-	-	-	-	27
81-83	-	-	-	-	-	-	5	2	-	1	-	-	-	2	10
84-86	-	-	-	-	-	-	5	1	-	1	-	-	-	-	7
87-89	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Total Number	33	10	5	62	31	20	38	8	1	22	1	1	-	2	234
Mean Length (cm)															66.9

1) The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	
Number of Fish	234
Mean Age	8.1
Mean Length (cm)	66.9
Mean Weight (Kg)	3.0

TABLE 32 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1] by Paul M. Hansen

West Greenland (Inshore and Fjords) - Research Catches

Location	1F Kitsigssut 60°03'N, 46°10'W and 60°03'N, 46°08'W																			
Gear	Longline																			
Month	September-October																			
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	-	1936	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-	24	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																			
42-44	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
45-47	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
48-50	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
51-53	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
54-56	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
57-59	-	-	2	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
60-62	-	-	-	12	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18
63-65	-	-	8	22	3	2	-	-	-	7	-	-	-	-	-	-	-	-	-	42
66-68	-	-	-	63	5	-	3	-	-	7	-	-	-	-	-	-	-	-	-	78
69-71	-	-	-	89	5	6	4	1	2	48	13	1	-	-	-	-	-	-	-	169
72-74	-	-	-	80	6	6	10	6	7	58	-	5	-	-	-	-	-	-	-	178
75-77	-	-	-	1	9	11	25	6	3	83	3	2	-	-	-	-	-	-	-	143
78-80	-	-	-	1	2	5	25	6	3	45	4	4	-	-	3	-	-	-	-	98
81-83	-	-	-	-	-	2	17	1	-	20	-	4	1	1	1	-	-	-	-	47
84-86	-	-	-	-	-	1	6	3	1	2	-	2	-	-	1	-	-	-	-	16
87-89	-	-	-	-	-	-	7	2	-	-	-	-	-	-	2	-	2	-	-	13
90-92	-	-	-	-	-	-	1	2	-	-	-	-	-	1	-	-	1	-	-	5
93-95	-	-	-	-	-	-	1	-	-	2	-	-	-	-	-	-	-	-	-	3
96-98	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Number	6	4	10	269	39	33	99	27	16	274	20	18	1	2	7	-	3	-	1	829
Mean Length (cm)																				73.0

[1] The length frequencies of these samples are given in Table 11; the age frequencies are given in Table 24.

SAMPLE DATA: see page 128.

TABLE 33 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1] by Paul M. Hansen

Greenlanders' - Commercial Landings Serial No. 14

Location	1A - Claushavn 69°03'N, 51°00'W													
Month	August and September													
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1942	Total
Age	5	6	7	8	9	10	11	12	13	14	15	-	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ													
63-65	1	1	2	-	-	-	-	-	-	-	-	-	-	4
66-68	-	2	3	-	-	-	-	-	-	-	-	-	-	5
69-71	-	1	8	-	-	-	-	-	-	-	-	-	-	9
72-74	-	1	23	1	2	-	-	-	-	-	-	-	-	27
75-77	1	-	6	4	2	1	-	-	-	-	-	-	-	14
78-80	-	-	3	2	3	3	-	-	1	-	-	-	-	12
81-83	-	-	1	-	2	-	-	1	-	-	-	-	-	4
84-86	-	-	1	1	1	1	-	-	3	-	-	-	-	7
87-89	-	-	-	-	-	2	-	-	1	-	-	-	1	4
90-92	-	-	-	-	-	-	-	1	4	-	-	-	-	5
93-95	-	-	-	-	-	-	-	-	1	-	1	-	-	2
96-98	-	-	-	-	-	-	-	-	1	-	1	-	-	2
Total Number	2	5	47	8	10	7	-	2	11	-	2	-	1	95
Mean Length (cm)														76.1

[1] The length frequencies of these samples are given in Table 12; the age frequencies are given in Table 25.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	14
Number of Fish	95
Mean Age	8.5
Mean Length (cm)	76.1
Mean Weight (Kg)	4.8

SAMPLE DATA for p.127: Sample Serial Nos. --; Number of Fish - 829; Mean Age - 10.9; Mean Length (cm) - 73.0; Mean Weight (Kg) - 3.5; Range of Depths (fm) - 60.

TABLE 33 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1] by Paul M. Hansen
(cont'd.)

Greenlanders' - Commercial Landings Serial No. 13

Location	1A - Jakobshavn														
Month	September														
Year-Class	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	1940	Total
Age	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ														
63-65	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
66-68	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3
69-71	3	-	-	-	-	-	1	-	-	-	-	-	-	-	4
72-74	6	3	-	-	-	1	2	-	-	-	-	-	-	-	12
75-77	11	-	1	-	-	-	2	-	1	-	-	-	-	-	15
78-80	3	3	6	7	-	3	8	1	-	-	2	-	-	-	33
81-83	1	1	4	5	-	3	5	1	-	1	-	3	-	-	24
84-86	-	-	-	6	-	-	18	-	4	1	1	2	1	1	34
87-89	-	-	2	5	-	2	13	-	3	2	1	-	-	-	28
90-92	-	-	-	2	-	-	9	-	-	-	2	3	-	-	16
93-95	-	-	-	3	-	2	1	-	2	-	1	3	1	1	14
96-98	-	-	-	-	-	1	3	1	1	-	-	2	1	1	10
99-101	-	-	-	-	-	-	-	-	1	2	-	-	-	-	3
102-104	-	-	-	1	-	-	1	-	-	-	-	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
Total Number	28	7	13	29	-	12	63	3	12	7	7	13	3	3	200
Mean Length (cm)															84.7

[1] The length frequencies of these samples are given in Table 12; the age frequencies are given in Table 25.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	13
Number of Fish	200
Mean Age	12.1
Mean Length (cm)	84.7
Mean Weight (Kg)	6.3

TABLE 33 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1] by Paul M. Hansen
(cont'd.)

Greenlanders' - Commercial Landings Serial No. 17

Location	1B - Holsteinsborg 66°55'N, 53°35'W													
Month	July-August													
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	-	1944	Total
Age	3	4	5	6	7	8	9	10	11	12	13	-	16	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ													
30-32	-	1	-	-	-	-	-	-	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39-41	1	1	-	-	-	-	-	-	-	-	-	-	-	2
42-44	5	-	-	-	-	-	-	-	-	-	-	-	-	5
45-47	1	5	-	-	-	-	-	-	-	-	-	-	-	6
48-50	-	11	2	-	-	-	-	-	-	-	-	-	-	13
51-53	-	6	3	1	-	-	-	-	-	-	-	-	-	10
54-56	-	9	5	-	-	-	-	-	-	-	-	-	-	14
57-59	-	7	11	1	-	-	-	-	-	-	-	-	-	19
60-62	-	-	16	4	2	-	-	-	-	-	-	-	-	22
63-65	-	1	15	3	4	-	-	-	-	-	-	-	-	23
66-68	1	-	2	8	6	-	-	-	-	-	-	-	-	17
69-71	-	-	1	6	13	2	-	-	-	-	-	-	-	22
72-74	-	-	-	1	4	-	1	1	-	-	-	-	-	7
75-77	-	-	1	-	5	3	-	3	-	-	-	-	-	12
78-80	-	-	-	1	3	3	-	2	-	-	-	-	-	9
81-83	-	-	-	-	1	1	-	1	-	1	-	-	-	4
84-86	-	-	-	-	1	-	-	4	-	1	-	-	-	6
87-89	-	-	-	-	-	1	1	-	-	-	-	-	-	2
90-92	-	-	-	-	-	-	-	1	-	-	2	-	-	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	1	-	-	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Number	8	41	56	25	39	10	2	13	-	2	2	-	1	199
Mean Length (cm)														64.1

[1] The length frequencies of these samples are given in Table 12; the age frequencies are given in Table 25.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	17
Number of Fish	199
Mean Age	5.7
Mean Length (cm)	64.1
Mean Weight (Kg)	2.7

TABLE 33 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

Greenlanders' - Commercial Landings Serial No. 16

Location	IB Niakornarssuk - 68°14'N, 52°42'W Ikerasak, 68°00'N, 53°28'W Agto, 67°56'N, 53°30'W															
Month	August-September															
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	-	1943	1942	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	-	17	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ															
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	3	3	1	-	-	-	-	-	-	-	-	-	-	-	-	7
51-53	-	4	3	-	-	-	-	-	-	-	-	-	-	-	-	7
54-56	-	8	6	-	-	-	-	-	-	-	-	-	-	-	-	14
57-59	-	1	5	1	4	-	-	-	-	-	-	-	-	-	-	11
60-62	-	-	24	9	7	-	-	-	-	-	-	-	-	-	-	40
63-65	-	-	16	16	9	1	-	-	-	-	-	-	-	-	-	42
66-68	-	-	16	22	41	-	-	-	-	-	-	-	-	-	-	79
69-71	-	-	5	30	71	6	1	1	-	-	-	-	-	-	-	114
72-74	-	-	-	16	67	5	-	-	-	-	-	-	-	-	-	88
75-77	-	-	-	9	79	7	2	2	-	-	1	-	-	-	-	100
78-80	-	-	-	1	32	2	1	5	-	1	6	-	-	-	-	48
81-83	-	-	-	1	16	1	1	6	2	-	12	-	-	-	-	39
84-86	-	-	-	-	6	-	4	4	-	2	15	-	-	-	-	31
87-89	-	-	-	-	4	2	-	4	-	1	7	-	-	-	-	18
90-92	-	-	-	-	1	3	-	6	-	2	10	3	-	1	-	26
93-95	-	-	-	-	-	1	-	2	-	-	2	2	-	-	-	7
96-98	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2
99-101	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
105-107	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
Total Number	4	16	76	105	337	28	9	30	2	7	56	5	-	1	1	677
Mean Length (cm)																72.8

[1)] The length frequencies of these samples are given in Table 12; the age frequencies are given in Table 25.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	16
Number of Fish	677
Mean Age	7.4
Mean Length (cm)	72.8

TABLE 33 DENMARK (Greenland) - 1960 (cont'd.) AGE/LENGTH KEY - COD[1] by Paul M. Hansen

Greenlanders' - Commercial Landings Serial No. 15

Location	1B Akunak - 68°44'N, 52°12'W Egedesminde, 68°42'N, 52°45'W Hunde-ejalnd, 68°51'N, 52°58'W																
Month	September-October																
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																
30-32	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
33-35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
36-38	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
39-41	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
42-44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45-47	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4
48-50	-	1	3	-	1	-	-	-	-	-	-	-	-	-	-	-	5
51-53	-	2	6	-	2	-	-	-	-	-	-	-	-	-	-	-	10
54-56	-	1	2	7	6	-	-	-	-	-	-	-	-	-	-	-	16
57-59	-	-	5	4	11	1	-	-	-	-	-	-	-	-	-	-	21
60-62	-	-	6	9	25	-	-	-	-	-	-	-	-	-	-	-	40
63-65	-	-	8	15	23	2	-	-	-	-	1	-	2	-	-	-	51
66-68	-	-	4	8	18	2	1	4	-	-	1	-	-	-	-	-	38
69-71	-	-	2	9	54	2	2	3	-	-	1	-	-	-	-	-	73
72-74	-	-	1	8	40	3	2	2	-	1	1	-	-	-	-	-	58
75-77	-	-	-	1	41	8	5	4	1	-	3	-	-	-	-	-	63
78-80	-	-	-	2	25	10	9	7	-	1	4	-	-	-	-	1	59
81-83	-	-	-	-	10	4	3	11	-	1	5	-	-	-	1	-	35
84-86	-	-	-	-	5	2	2	10	1	-	5	-	1	-	2	1	29
87-89	-	-	-	-	-	1	2	6	-	-	7	-	-	-	-	-	16
90-92	-	-	-	-	-	-	1	6	-	-	3	-	1	1	-	-	12
93-95	-	-	-	-	-	-	-	1	1	-	-	1	-	-	-	-	3
Total Number	4	6	41	63	261	35	27	54	3	3	31	1	4	1	3	2	539
Mean Length (cm)																	71.1

[1] The length frequencies for these samples are given in Table 12; the age frequencies are given in Table 25.
SAMPLE DATA: Sample Serial Nos. - 15; Number of Fish - 539; Mean Age - 7.7; Mean Length (cm) - 71.1.

(cont'd.)

TABLE 33 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

Greenlanders' - Commercial Landings Serial No. 18

Location	1D Fiskenæsset - 63°42'N, 50°52'W														
Month	July														
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1942	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	-	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ														
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	11	-	-	-	-	-	-	-	-	-	-	-	-	-	11
51-53	22	3	-	-	-	-	-	-	-	-	-	-	-	-	25
54-56	14	3	-	-	-	-	-	-	-	-	-	-	-	-	17
57-59	9	5	-	2	-	-	-	-	-	-	-	-	-	-	16
60-62	1	15	4	2	-	-	-	-	-	-	-	-	-	-	22
63-65	-	4	3	2	-	-	-	-	-	-	-	-	-	-	9
66-68	-	3	3	8	-	-	-	-	-	-	-	-	-	-	14
69-71	-	2	6	9	-	-	1	-	-	-	-	-	-	-	18
72-74	-	-	1	13	1	1	4	-	-	-	-	-	-	-	20
75-77	-	-	-	7	2	-	-	-	-	2	-	-	-	-	11
78-80	-	-	-	3	2	2	5	-	1	-	-	-	-	-	13
81-83	-	-	-	1	2	2	1	-	-	1	-	-	-	-	7
84-86	-	-	-	3	-	1	2	-	-	3	-	-	-	-	9
87-89	-	-	-	2	-	-	-	-	-	-	-	1	-	-	3
90-92	-	-	-	-	-	-	-	1	-	1	-	-	-	-	2
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2
Total Number	58	35	17	52	7	6	13	1	1	8	-	1	-	1	200
Mean Length (cm)															65.9

1)The length frequencies of these samples are given in Table 12; the age frequencies are given in Table 25.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	18
Number of Fish	200
Mean Age	6.4
Mean Length (cm)	65.9
Mean Weight (Kg)	2.8

TABLE 33 DENMARK (Greenland) – 1960 AGE/LENGTH KEY – COD[1)] by Paul M. Hansen
(cont'd.)

Greenlanders' – Commercial Landings Serial No. 19

Location	1D Fiskenæsset – 63°42'N, 50°52'W										
Month	September										
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	–	1944	Total
Age	4	5	6	7	8	9	10	11	–	16	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ										
45-47	6	–	–	–	–	–	–	–	–	–	6
48-50	24	1	–	–	–	–	–	–	–	–	25
51-53	53	1	–	–	–	–	–	–	–	–	54
54-56	49	5	–	–	–	–	–	–	–	–	54
57-59	20	8	–	–	–	–	1	–	–	–	29
60-62	2	4	–	–	–	–	–	–	–	–	6
63-65	–	2	–	2	–	–	–	–	–	–	4
66-68	–	1	2	2	–	–	–	–	–	–	5
69-71	–	2	–	1	–	–	–	–	–	–	3
72-74	–	–	–	3	–	–	–	–	–	–	3
75-77	–	–	–	1	–	–	1	1	–	–	3
78-80	–	–	–	–	–	–	1	–	–	–	1
81-83	–	–	–	2	–	–	–	–	–	–	2
84-86	–	–	–	–	–	–	–	–	–	–	–
87-89	–	–	–	–	–	–	1	–	–	–	1
90-92	–	–	–	–	–	–	–	–	–	–	–
93-95	–	–	–	–	1	–	–	–	–	–	1
96-98	–	–	–	–	–	–	1	–	–	–	1
99-101	–	–	–	–	–	–	–	–	–	–	–
102-104	–	–	–	–	–	–	–	–	–	1	1
Total Number	154	24	2	11	1	–	5	1	–	1	199
Mean Length (cm)											55.0

[1)] The length frequencies for these samples are given in Table 12; the age frequencies are given in Table 25.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	19
Number of Fish	199
Mean Age	4.6
Mean Length (cm)	55.0
Mean Weight (Kg)	1.8

TABLE 33 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

Greenlanders' - Commercial Landings Serial No. 20

Location	1E - Frederikshåb										
Month	May-June										
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	Total
Age	4	5	6	7	8	9	10	11	12	13	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ										
39-41	1	-	-	-	-	-	-	-	-	-	1
42-44	15	-	-	-	-	-	-	-	-	-	15
45-47	18	1	1	-	-	-	-	-	-	-	20
48-50	16	-	-	-	-	-	-	-	-	-	16
51-53	12	3	-	-	-	-	-	-	-	-	15
54-56	2	3	1	-	-	-	-	-	-	-	6
57-59	2	7	1	-	-	-	-	-	-	-	10
60-62	-	3	5	1	-	-	-	-	-	-	9
63-65	-	2	1	8	-	-	-	-	-	-	11
66-68	-	1	2	8	-	1	1	-	-	-	13
69-71	-	-	1	13	3	1	-	-	-	-	18
72-74	-	-	-	18	1	-	1	-	-	-	20
75-77	-	-	-	3	6	-	-	-	-	-	9
78-80	-	-	-	3	2	1	2	-	-	-	8
81-83	-	-	-	-	3	-	1	-	-	-	4
84-86	-	-	-	-	-	-	-	-	-	-	-
87-89	-	-	-	1	-	-	1	1	-	1	4
Total Number	66	20	12	55	15	3	6	1	-	1	179
Mean Length (cm)											60.8

1) The length frequencies of these samples are given in Table 12; the age frequencies are given in Table 25.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	20
Number of Fish	179
Mean Age	5.9
Mean Length (cm)	60.8

TABLE 33 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

Greenlanders' - Commercial Landings Serial No. 21

Location	1E Frederikshåb - 62°00'N, 49°43'W												
Month	October												
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ												
45-47	2	-	-	-	-	-	-	-	-	-	-	-	2
48-50	5	-	-	-	-	-	-	-	-	-	-	-	5
51-53	10	1	-	-	-	-	-	-	-	-	-	-	11
54-56	4	4	-	-	-	-	-	-	-	-	-	-	8
57-59	-	2	-	-	-	-	-	-	-	-	-	-	2
60-62	-	1	4	1	-	-	-	-	1	-	-	-	7
63-65	-	4	5	1	-	-	-	-	-	-	-	-	10
66-68	-	-	3	6	4	-	4	-	1	2	-	-	20
69-71	-	1	1	9	3	-	2	2	3	1	-	-	22
72-74	-	-	-	12	3	4	5	-	2	6	-	1	33
75-77	-	-	-	10	2	2	5	2	4	9	1	-	35
78-80	-	-	-	2	2	-	-	-	4	5	-	-	13
81-83	-	-	-	1	1	1	1	1	1	2	-	-	8
84-86	-	-	-	-	-	-	6	-	1	1	-	-	8
87-89	-	-	-	2	-	1	2	-	-	-	1	-	6
90-92	-	-	-	1	-	-	2	-	-	-	-	-	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-
138	-	-	-	-	-	-	-	-	-	1	-	-	1
Total Number	21	13	13	45	15	8	27	5	17	27	2	1	194
Mean Length (cm)													71.1

1) The length frequencies of these samples are given in Table 12; the age frequencies are given in Table 25.

(cont'd.)

SAMPLE DATA

Sample Serial Nos.	21
Number of Fish	194
Mean Age	8.5
Mean Length (cm)	71.1

TABLE 33 DENMARK (Greenland) - 1960 AGE/LENGTH KEY - COD[1)] by Paul M. Hansen
(cont'd.)

Greenlanders' - Commercial Landings Serial No.22

Location	1F Lichtenau - 60°32'N, 45°34'W											
Month	September											
Year-Class	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1942	Total
Age	7	8	9	10	11	12	13	14	15	-	18	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ											
63-65	2	-	-	-	-	-	-	-	-	-	-	2
66-68	3	1	-	-	-	-	-	-	-	-	-	4
69-71	3	1	-	1	-	-	1	-	-	-	-	6
72-74	1	2	1	2	1	-	2	-	-	-	-	9
75-77	2	1	-	1	-	1	3	-	-	-	-	8
78-80	-	2	1	3	1	2	4	-	-	-	-	13
81-83	1	1	1	5	1	-	2	-	1	-	-	12
84-86	-	-	-	5	1	-	1	-	-	-	-	7
87-89	-	-	-	1	1	-	-	-	-	-	1	3
90-92	-	-	-	1	-	-	1	-	-	-	-	2
93-95	-	-	-	2	1	-	-	-	-	-	-	3
Total Number	12	8	3	21	6	3	14	-	1	-	1	69
Mean Length (cm)												78.5

1) The length frequencies of these samples are given in Table 12; the age frequencies are given in Table 25.

SAMPLE DATA

Sample Serial Nos.	22
Number of Fish	69
Mean Age	10.2
Mean Length (cm)	78.5

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer

OTTER TRAWLERS[2] - Commercial Landings Serial No. 46

Location	1C - Banana Bank												
Month	June												
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	<1945	Total
Age	5	6	7	8	9	10	11	12	13	14	15	>15	
3-cm group	FREQUENCIES in °/oo												
54-56	19	-	-	-	-	-	-	-	-	-	-	-	19
57-59	21	21	-	-	-	-	-	-	-	-	-	-	42
60-62	32	11	32	-	-	-	-	-	-	-	-	-	75
63-65	8	8	68	-	-	-	-	-	-	-	-	-	84
66-68	-	10	115	-	10	-	-	-	-	-	-	-	135
69-71	-	36	178	-	-	-	-	-	-	-	-	-	214
72-74	-	-	134	-	10	-	-	-	-	-	-	-	144
75-77	-	7	72	-	-	21	-	-	-	-	-	-	100
78-80	-	-	29	6	6	11	-	6	11	-	-	-	69
81-83	-	-	5	3	-	13	-	-	15	-	3	3	42
84-86	-	-	2	-	4	13	-	2	8	-	-	-	29
87-89	-	-	-	-	6	6	-	-	5	-	5	2	24
90-92	-	-	-	2	-	2	-	-	5	2	-	5	16
93-95	-	-	-	-	-	-	-	-	-	-	2	2	4
96-98	-	-	-	-	-	-	-	-	2	-	-	-	2
99-101	-	-	-	-	-	1	-	-	-	-	-	-	1
Total Number	80	93	635	11	36	67	-	8	46	2	10	12	1000
Mean Length (cm)			70.7										71.7

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	46
Number of Samples	1
Number of Fish Measured	338
No. of Fish Aged	163
Mean Length (cm)	71.7
Mean Weight (Kg)	2.5
Total Weight Landed (tons)	53
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer

OTTER TRAWLERS[2] - Commercial Landings Serial No. 58

Location	1C - Banana Bank																	
Month	December																	
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	<1942	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	>18	
3-cm group	FREQUENCIES in °/oo																	
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
51-53	4	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22
54-56	-	21	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27
57-59	-	53	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77
60-62	-	48	102	12	6	-	-	-	-	-	-	-	-	-	-	-	-	168
63-65	-	9	137	27	27	-	-	-	-	-	-	-	-	-	-	-	-	200
66-68	-	-	76	49	21	-	-	-	-	-	-	-	-	-	-	-	-	146
69-71	-	-	33	27	47	-	-	-	-	-	-	-	-	-	-	-	-	107
72-74	-	-	13	7	53	-	-	-	-	-	-	-	-	-	-	-	-	73
75-77	-	-	-	9	42	14	-	-	-	-	-	-	-	-	-	-	-	65
78-80	-	-	-	-	37	10	-	-	-	-	-	-	-	-	-	-	-	47
81-83	-	-	-	-	13	-	2	2	-	-	-	-	-	-	-	-	-	17
84-86	-	-	-	-	10	-	6	2	-	-	-	-	-	-	-	-	-	18
87-89	-	-	-	-	4	-	-	1	-	-	3	1	-	1	-	-	-	10
90-92	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
93-95	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	2
96-98	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
99-101	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	2
102-104	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
108-110	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
111-113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Number	16	149	391	131	262	24	8	6	-	-	6	2	-	2	1	-	2	1000
Mean Length (cm)		58.7	64.6	67.9	73.9													67.4

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.
SAMPLE DATA: Sample Serial Numbers-58; Number of Samples-1; Number of Fish Measured-512; No. of Fish Aged-204; Mean Length (cm)-67.4; Mean Weight (Kg)-2.5; Total Weight Landed(t)-101; Mesh Size(mm)-110; (cont'd.)
Range of Depths (fm)-100-110 [2] 500-900 gross tons.

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] - Commercial Landings Serial No. 49

Location	1C/D - Fyllas & Lille Hellefiske Bank													
Month	July													
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	<1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	>15	
3-cm group	FREQUENCIES in ‰													
48-50	1	-	-	-	-	-	-	-	-	-	-	-	-	1
51-53	17	-	-	-	-	-	-	-	-	-	-	-	-	17
54-56	41	8	-	4	-	-	-	-	-	-	-	-	-	53
57-59	40	28	11	6	-	-	-	-	-	-	-	-	-	85
60-62	-	64	5	32	-	-	-	-	-	-	-	-	-	101
63-65	-	-	37	35	-	-	-	-	-	-	-	-	-	72
66-68	-	-	17	111	9	-	-	-	-	-	-	-	-	137
69-71	-	-	8	84	-	-	8	-	-	-	-	-	-	100
72-74	-	-	-	81	27	18	9	-	-	-	-	-	-	135
75-77	-	-	-	55	7	14	-	7	-	21	-	-	-	104
78-80	-	-	-	50	-	-	17	-	-	-	-	-	-	67
81-83	-	-	-	11	-	11	18	-	-	11	-	6	-	57
84-86	-	-	-	-	-	7	3	3	-	3	-	-	-	16
87-89	-	-	-	-	-	-	8	-	-	3	-	5	5	21
90-92	-	-	-	-	1	-	5	-	2	-	-	2	-	10
93-95	-	-	-	-	-	-	3	1	-	2	1	1	-	8
96-98	-	-	-	-	-	-	-	-	-	2	-	3	2	7
99-101	-	-	-	-	-	-	1	-	-	1	-	-	-	2
102-104	-	-	-	-	-	-	-	-	-	-	-	1	-	1
105-107	-	-	-	-	-	-	-	-	-	3	-	-	-	3
108-110	-	-	-	-	-	-	-	-	-	1	-	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
117-119	-	-	-	-	-	-	-	-	-	-	-	1	-	1
>119	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Total Number	99	100	78	469	44	50	72	11	2	47	1	20	7	1000
Mean Length (cm)	56.1	60.2		70.9										70.5

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	49
Number of Samples	1
Number of Fish Measured	449
No. of Fish Aged	189
Mean Length (cm)	70.5
Mean Weight (Kg)	3.3
Total Weight Landed (tons)	21
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] - Commercial Landings Serial No. 35

Location	1D - Fyllas Bank													
Month	April													
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	<1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	>15	
3-cm group	FREQUENCIES in ‰													
51-53	-	1	-	-	-	-	-	-	-	-	-	-	-	1
54-56	-	28	4	-	-	-	-	-	-	-	-	-	-	32
57-59	5	43	14	5	-	-	-	-	-	-	-	-	-	67
60-62	-	39	29	7	-	-	-	-	-	-	-	-	-	75
63-65	-	-	30	58	5	-	-	-	-	-	-	-	-	93
66-68	-	-	13	145	13	-	-	-	-	-	-	-	-	171
69-71	-	-	-	190	-	-	-	-	-	-	-	-	-	190
72-74	-	-	-	119	11	11	-	-	-	-	-	-	-	141
75-77	-	-	-	40	27	-	27	-	-	-	-	-	-	94
78-80	-	-	-	-	22	-	21	-	-	-	-	-	-	43
81-83	-	-	-	-	-	-	-	-	-	29	-	-	-	29
84-86	-	-	-	-	-	-	-	-	-	-	-	-	9	9
87-89	-	-	-	-	-	-	-	-	-	12	-	-	-	12
90-92	-	-	-	-	-	-	-	-	-	10	-	-	-	10
93-95	-	-	-	-	-	-	1	-	-	-	-	3	3	7
96-98	-	-	-	-	-	-	-	-	-	-	-	-	9	9
99-101	-	-	-	-	-	-	-	-	-	-	-	5	-	5
102-104	-	-	-	-	-	-	-	-	-	-	-	-	3	3
105-107	-	-	-	-	-	-	-	-	-	2	-	-	-	2
108-110	-	-	-	-	-	-	-	-	-	-	-	-	4	4
111-113	-	-	-	-	-	-	-	-	-	-	-	-	1	1
114-116	-	-	-	-	-	-	-	-	-	-	-	-	1	1
117-119	-	-	-	-	-	-	-	-	-	-	-	-	-	-
>119	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Number	5	111	90	564	78	11	49	-	-	53	-	8	31	1000
Mean Length (cm)		58.7		70.0										70.8

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	35
Number of Samples	1
Number of Fish Measured	741
No. of Fish Aged	178
Mean Length (cm)	70.8
Mean Weight (Kg)	2.4
Total Weight Landed (tons)	79
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY – 1960 AGE/LENGTH FREQUENCIES – COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] – Commercial Landings Serial No. 50

Location	1D – Fyllas Bank												
Month	August												
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	
3-cm group	FREQUENCIES in ‰												
48–50	1	–	–	–	–	–	–	–	–	–	–	–	1
51–53	1	1	–	–	–	–	–	–	–	–	–	–	2
54–56	3	1	–	–	–	–	–	–	–	–	–	–	4
57–59	–	10	–	4	–	–	–	–	–	–	–	–	14
60–62	9	28	28	9	–	–	–	–	–	–	–	–	74
63–65	–	–	30	15	8	–	–	–	–	–	–	–	53
66–68	–	8	50	34	–	–	–	–	–	–	–	–	92
69–71	–	5	39	122	5	5	5	–	5	–	–	–	186
72–74	–	–	7	126	15	7	–	–	–	7	–	–	162
75–77	–	–	–	75	15	10	–	–	10	5	–	–	115
78–80	–	–	8	44	15	–	23	8	8	8	–	–	114
81–83	–	–	–	12	12	16	6	–	12	12	–	–	70
84–86	–	–	–	3	–	–	14	3	–	18	–	3	41
87–89	–	–	–	–	–	4	7	4	–	7	–	–	22
90–92	–	–	–	–	–	–	3	–	–	13	3	–	19
93–95	–	–	–	–	–	–	–	3	3	11	–	3	20
96–98	–	–	–	–	–	–	–	–	–	1	–	–	1
99–101	–	–	–	–	–	–	–	–	–	3	–	1	4
102–104	–	–	–	–	–	–	–	–	–	–	–	3	3
105–107	–	–	–	–	–	–	–	–	–	–	–	3	3
Total Number	14	53	162	444	70	42	58	18	38	85	3	13	1000
Mean Length (cm)			67.5	73.0									74.2

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500–900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	50
Number of Samples	1
Number of Fish Measured	449
No. of Fish Aged	189
Mean Length (cm)	74.2
Mean Weight (Kg)	3.0
Total Weight Landed (tons)	101
Mesh Size (mm)	110
Range of Depths (fm)	50–60

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] - Commercial Landings Serial Nos. 41-44

Location	1E - Noname Bank													
Month	June													
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	<1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	>15	
3-cm group	FREQUENCIES in ‰													
48-50	-	1	-	-	-	-	-	-	-	-	-	-	-	1
51-53	1	3	-	-	-	-	-	-	-	-	-	-	-	4
54-56	-	1	-	3	-	-	-	-	-	-	-	-	-	4
57-59	-	12	3	-	-	-	-	-	-	-	-	-	-	15
60-62	-	-	15	42	-	-	-	-	-	-	-	-	-	57
63-65	-	-	18	47	-	9	-	-	-	-	-	-	-	74
66-68	-	-	18	55	9	4	4	-	-	-	-	-	-	90
69-71	-	-	18	81	23	5	5	5	-	9	-	-	-	146
72-74	-	-	-	36	5	20	35	10	-	20	-	-	-	126
75-77	-	-	-	14	17	20	31	3	7	31	7	3	3	136
78-80	-	-	-	6	3	14	39	-	11	42	3	3	3	124
81-83	-	-	-	-	-	10	15	2	5	32	3	3	3	73
84-86	-	-	-	-	-	2	19	2	14	18	2	2	-	59
87-89	-	-	-	-	-	2	6	-	5	12	1	4	1	31
90-92	-	-	-	-	-	-	5	2	1	14	-	1	2	25
93-95	-	-	-	-	-	-	5	-	1	4	-	1	-	11
96-98	-	-	-	-	-	-	3	-	2	3	-	-	2	10
99-101	-	-	-	-	-	-	-	-	-	2	-	1	-	3
102-104	-	-	-	-	-	-	-	-	-	-	-	11	-	11
Total Number	1	17	72	284	57	86	167	24	46	187	16	29	14	1000
Mean Length (cm)				68.3		75.5	79.5			81.3				75.1

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	41-44
Number of Samples	4
Number of Fish Measured	1875
No. of Fish Aged	360
Mean Length (cm)	75.1
Mean Weight (Kg)	3.0
Total Weight Landed (tons)	481
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] Commercial Landings Serial No. 13

Location	East Greenland - Angmagssalik											
Month	January											
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
Age	5	6	7	8	9	10	11	12	13	14	15	
3-cm group	FREQUENCIES in ‰											
54-56	2	-	-	-	-	-	-	-	-	-	-	2
57-59	26	-	-	-	-	-	-	-	-	-	-	26
60-62	56	11	-	-	-	-	-	-	-	-	-	67
63-65	14	17	17	-	7	7	-	-	-	-	-	62
66-68	7	51	35	-	7	-	-	-	-	-	-	100
69-71	-	76	19	9	-	37	-	-	-	-	-	141
72-74	-	29	30	8	-	8	8	-	8	-	-	91
75-77	-	15	23	8	15	85	-	-	-	-	-	146
78-80	-	-	40	-	8	82	32	-	-	-	-	162
81-83	-	4	13	9	9	52	18	-	-	-	-	105
84-86	-	-	-	4	4	31	17	-	-	-	4	60
87-89	-	-	-	2	-	10	7	-	-	-	-	19
90-92	-	-	-	3	3	3	-	-	-	-	-	9
93-95	-	-	-	-	-	3	3	-	-	-	-	6
96-98	-	-	-	-	-	2	1	-	-	-	-	3
99-101											1	1
Total Number	105	203	177	43	53	320	86	-	8	-	5	1000
Mean Length (cm)	61.4	74.8	73.5			76.0						74.4

1) The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

2) 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	13
Number of Samples	1
Number of Fish Measured	431
No. of Fish Aged	177
Mean Length (cm)	74.4
Mean Weight (Kg)	2.9
Total Weight Landed (tons)	19
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY (cont'd.) AGE/LENGTH FREQUENCIES – COD[1] by Arno Meyer

OTTER TRAWLERS[2] Commercial Landings Serial No. 16

Location	East Greenland – Angmagssalik								
Month	February								
Year-Class	1954	1953	1952	1951	1950	1949	1948	1947	Total
Age	6	7	8	9	10	11	12	13	
3-cm group	FREQUENCIES in ‰								
63–65	–	9	–	–	10	–	–	–	19
66–68	–	28	18	–	18	–	–	–	64
69–71	–	45	45	9	52	–	–	–	151
72–74	6	30	12	18	45	18	–	–	129
75–77	–	26	13	19	127	13	–	–	198
78–80	–	–	7	21	109	21	–	7	165
81–83	–	–	–	–	90	32	–	5	127
84–86	–	–	5	–	41	15	5	–	66
87–89	–	–	–	3	20	20	–	–	43
90–92	–	–	3	–	11	3	–	3	20
93–95	–	–	–	1	3	5	–	1	10
96–98	–	–	–	–	–	4	–	–	4
99–101	–	–	–	2	–	–	–	–	2
–	–	–	–	–	–	–	–	–	–
111–113	–	–	–	–	–	–	–	2	2
Total Number	6	138	103	73	526	131	5	18	1000
Mean Length (cm)		71.3	73.0		78.3	83.0			77.5

1) The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

2) 500–900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	16
Number of Samples	1
Number of Fish Measured	369
No. of Fish Aged	184
Mean Length (cm)	77.5
Mean Weight (Kg)	3.2
Total Weight Landed (tons)	85
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] - Commercial Landings Serial No. 32

Location	East Greenland - Angmagssalik												
Month	March												
Year-Class	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1942	Total
Age	6	7	8	9	10	11	12	13	14	15	-	18	
3-cm group	FREQUENCIES in ‰												
60-62	9	-	-	-	-	-	-	-	-	-	-	-	9
63-65	-	38	-	-	-	-	-	-	-	-	-	-	38
66-68	-	12	12	-	12	12	-	-	-	-	-	-	48
69-71	7	44	-	28	14	7	-	-	-	-	-	-	100
72-74	-	83	55	33	77	11	-	-	-	-	-	-	209
75-77	-	37	37	27	16	16	-	-	-	-	-	-	133
78-80	-	27	27	18	83	9	-	9	-	9	-	-	182
81-83	-	8	8	16	69	16	-	16	-	8	-	-	141
84-86	-	-	-	6	61	6	6	-	-	-	-	-	79
87-89	-	-	4	2	14	4	-	4	-	2	-	-	30
90-92	-	-	1	1	2	2	-	6	-	1	-	-	13
93-95	-	-	-	-	3	2	-	2	-	1	-	-	8
96-98	-	-	-	-	3	1	-	1	-	2	-	1	8
99-101	-	-	-	-	1	-	-	-	-	-	-	-	1
102-104	-	-	-	-	-	1	-	-	-	-	-	-	1
Total Number	16	199	144	131	355	87	6	38	-	23	-	1	1000
Mean Length (cm)		72.5	75.9	76.3	79.7								77.3

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	32
Number of Samples	1
Number of Fish Measured	344
No. of Fish Aged	177
Mean Length (cm)	77.3
Mean Weight (Kg)	3.0
Total Weight Landed (tons)	123
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] - Commercial Landings Serial Nos. 24/27

Location	East Greenland - Tordenskjold															
Month	March															
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	1941	Total
Age	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
3-cm group	FREQUENCIES in ‰															
54-56	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
58-59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60-62	-	2	20	-	-	2	-	-	-	-	-	-	-	-	-	24
63-65	-	3	42	13	-	6	-	-	-	-	-	-	-	-	-	64
66-68	-	-	37	20	15	10	5	5	10	-	-	5	-	-	-	107
69-71	-	-	69	12	12	20	-	4	-	-	-	-	-	-	-	117
72-74	-	-	75	20	20	32	-	-	16	-	4	-	4	-	-	171
75-77	-	-	20	20	32	68	4	4	16	-	-	-	-	-	-	164
78-80	-	-	19	6	29	38	6	6	22	3	10	-	-	-	3	142
81-83	-	-	10	8	16	41	3	3	13	-	3	-	-	-	-	97
84-86	-	-	-	1	4	27	4	5	14	1	3	-	-	-	-	59
87-89	-	-	-	1	-	15	1	-	7	-	2	-	-	-	-	26
90-92	-	-	-	-	-	3	1	-	7	1	-	-	-	-	-	12
93-95	-	-	-	-	-	-	-	-	-	8	1	-	-	-	-	9
96-98	-	-	-	-	-	1	1	1	1	-	-	-	-	-	-	4
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Total Number	2	5	292	101	128	264	25	28	115	6	22	5	4	-	3	1000
Mean Length (cm)			70.8	72.7	76.1	78.3			81.0							75.5

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	24+27
Number of Samples	2
Number of Fish Measured	937
No. of Fish Aged	203
Mean Length (cm)	75.5
Mean Weight (Kg)	2.9
Total Weight Landed (tons)	14.9
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] - Commercial Landings Serial No. 33

Location	East Greenland - Tordenskjold														
Month	April														
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	-	1942	<1942	Total
Age	5	6	7	8	9	10	11	12	13	14	15	-	18	>18	
3-cm group	FREQUENCIES in °/oo														
57-59	3	-	4	-	-	-	-	-	-	-	-	-	-	-	7
60-62	-	3	7	3	-	-	-	-	-	-	-	-	-	-	13
63-65	-	10	18	2	-	-	-	-	-	-	-	-	-	-	30
66-68	-	10	67	-	-	10	-	-	-	-	-	-	-	-	87
69-71	-	-	34	16	4	20	-	-	12	-	-	-	-	-	86
72-74	-	-	55	21	11	27	-	11	11	-	-	-	-	-	136
75-77	-	-	18	14	23	50	14	5	32	-	9	-	-	-	165
78-80	-	-	-	9	19	68	9	9	28	-	9	-	-	-	151
81-83	-	-	-	-	7	46	-	15	37	-	15	-	7	-	127
84-86	-	-	-	4	-	26	4	-	26	-	13	-	13	-	86
87-89	-	-	-	-	-	16	-	8	21	4	8	-	4	-	61
90-92	-	-	-	-	-	7	-	7	3	-	11	-	3	-	31
93-95	-	-	-	-	-	-	-	-	6	-	5	-	-	-	11
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	-	-	-	1	-	1	-	-	-	2
102-104	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
105-107	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
108-110	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
111-113	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
114-116	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Total Number	3	23	203	69	64	270	27	56	180	4	71	-	28	2	1000
Mean Length			69.8			79.2			81.8						77.8

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	33
Number of Samples	1
Number of Fish Measured	423
No. of Fish Aged	231
Mean Length (cm)	77.8
Mean Weight (Kg)	3.3
Total Weight Landed (tons)	169
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] - Commercial Landings Serial No. 45

Location	East Greenland - Fylkir Bank													
Month	June													
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	<1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	>15	
3-cm group	FREQUENCIES in ‰													
48-50	4	-	-	4	-	-	-	-	-	-	-	-	-	8
51-53	3	3	7	6	-	-	-	-	-	-	-	-	-	19
54-56	-	-	7	21	-	-	-	-	-	-	-	-	-	28
57-59	-	16	12	49	8	-	-	-	-	-	-	-	-	85
60-62	-	6	-	104	12	-	-	-	-	-	-	-	-	122
63-65	-	7	-	94	7	14	14	-	-	-	-	-	-	136
66-68	-	-	-	73	54	9	-	-	-	-	-	-	-	136
69-71	-	-	-	56	82	14	7	-	-	-	-	-	-	159
72-74	-	-	-	23	8	23	23	8	-	-	-	-	-	85
75-77	-	-	4	24	4	17	4	4	4	4	-	-	-	65
78-80	-	-	-	6	13	6	21	-	-	-	-	6	-	52
81-83	-	-	-	-	6	3	13	-	-	3	-	3	3	31
84-86	-	-	-	2	-	-	5	-	2	4	-	2	2	17
87-89	-	-	-	-	-	-	-	-	3	6	3	10	-	22
90-92	-	-	-	-	-	-	3	-	-	1	-	5	4	13
93-95	-	-	-	-	1	-	-	-	-	1	-	1	3	6
96-98	-	-	-	-	-	-	-	-	4	-	-	-	3	7
99-101	-	-	-	-	-	-	-	-	-	1	-	2	1	4
102-104	-	-	-	-	-	-	-	-	-	-	-	-	2	2
105-107	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	-	-	-	-	-	1	1
111-113	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	-	-	-	-	1	1
>116	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Number	7	32	30	462	195	86	90	12	13	20	3	29	21	1000
Mean Length (cm)				65.7	69.7									69.3

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.
[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	45
Number of Samples	1
Number of Fish Measured	488
No. of Fish Aged	205
Mean Length (cm)	69.3
Mean Weight (Kg)	2.4
Total Weight Landed (tons)	67
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] Commercial Landings Serial No. 47

Location	East Greenland - Fylkir Bank													
Month	July													
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	<1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	>15	
3-cm group	FREQUENCIES in ‰													
45-47	3	-	-	-	-	-	-	-	-	-	-	-	-	3
48-50	26	3	-	-	-	-	-	-	-	-	-	-	-	29
51-53	24	9	6	-	-	-	-	-	-	-	-	-	-	39
54-56	21	16	27	5	-	-	-	-	-	-	-	-	-	69
57-59	-	-	42	-	-	-	-	-	-	-	-	-	-	42
60-62	-	25	14	14	-	-	-	-	-	-	-	-	-	53
63-65	-	8	32	43	-	-	-	-	-	-	-	-	-	83
66-68	-	-	-	33	27	-	-	-	-	-	-	-	-	60
69-71	-	-	-	46	12	18	12	-	-	-	-	-	-	88
72-74	-	-	-	84	18	9	9	-	-	-	-	-	-	120
75-77	-	-	-	12	64	12	30	-	-	-	-	-	-	118
78-80	-	-	-	16	8	38	38	-	-	-	-	-	-	100
81-83	-	-	-	6	-	12	38	6	-	-	6	-	-	68
84-86	-	-	-	-	4	9	18	4	-	-	-	-	-	35
87-89	-	-	-	-	6	9	18	3	-	-	-	-	-	36
90-92	-	-	-	-	-	6	18	3	-	-	-	3	3	33
93-95	-	-	-	-	-	-	14	2	-	-	-	-	-	16
96-98	-	-	-	-	-	-	-	-	-	2	-	-	1	3
99-101	-	-	-	-	-	-	1	1	-	-	-	-	-	2
102-104	-	-	-	-	-	-	-	-	-	1	-	-	-	1
105-107	-	-	-	-	-	-	1	-	-	-	-	-	-	1
108-110	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Total Number	74	61	121	259	139	113	197	19	-	3	6	3	5	1000
Mean Length (cm)			59.5	70.4	74.8	79.4	82.6							71.7

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	47
Number of Samples	1
Number of Fish Measured	443
No. of Fish Aged	196
Mean Length (cm)	71.7
Mean Weight (Kg)	2.7
Total Weight Landed (tons)	28
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY – 1960 AGE/LENGTH FREQUENCIES – COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] Commercial Landings Serial No. 53

Location	East Greenland – Dohrn Bank												
Month	September												
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	<1945	Total
Age	5	6	7	8	9	10	11	12	13	14	15	>15	
3-cm group	FREQUENCIES in ‰												
60–62	2	–	–	–	–	–	–	–	–	–	–	–	2
63–65	–	–	–	10	–	–	–	–	–	–	–	–	10
66–68	7	–	4	4	–	–	–	–	–	–	–	–	15
69–71	14	5	15	10	–	–	–	–	–	–	–	–	44
72–74	4	8	8	14	8	8	–	–	–	–	–	–	50
75–77	5	–	75	5	–	10	–	–	–	–	–	–	95
78–80	–	–	95	7	7	7	–	–	–	–	–	–	116
81–83	–	10	20	10	20	54	20	–	–	–	–	–	134
84–86	–	–	55	22	–	82	–	–	11	–	–	–	170
87–89	–	8	24	8	8	44	40	–	–	–	8	–	140
90–92	–	–	–	9	–	56	18	–	–	–	–	–	83
93–95	–	–	–	–	–	11	11	–	23	–	–	–	45
96–98	–	–	–	–	–	16	24	–	–	–	8	–	48
99–101	–	–	–	–	–	4	9	–	–	–	–	–	13
102–104	–	–	–	–	–	13	–	–	–	–	9	–	22
105–107	–	–	–	–	–	–	3	–	–	–	–	–	3
108–110	–	–	–	–	–	–	–	–	–	–	10	–	10
Total Number	32	31	296	99	43	305	125	–	34	–	35	–	1000
Mean Length (cm)			80.0			87.7	91.5						84.6

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500–900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	53
Number of Samples	1
Number of Fish Measured	381
No. of Fish Aged	171
Mean Length (cm)	84.6
Mean Weight (Kg)	4.5
Total Weight Landed (tons)	14
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)
OTTER TRAWLERS[2] - Commercial Landings Serial No. 54

Location	East Greenland - Dohrn Bank										
Month	October										
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	-	1945	Total
Age	4	5	6	7	8	9	10	11	-	15	
3-cm group	FREQUENCIES in °/oo										
54-56	1	-	-	-	-	-	-	-	-	-	1
57-59	4	-	-	-	-	-	-	-	-	-	4
60-62	9	3	-	-	-	-	-	-	-	-	12
63-65	8	8	-	-	-	-	-	-	-	-	16
66-68	4	-	4	10	4	-	-	-	-	-	22
69-71	-	-	-	29	12	6	-	-	-	-	47
72-74	-	-	5	61	5	5	11	-	-	-	87
75-77	-	4	-	62	24	4	24	-	-	-	118
78-80	-	-	-	81	31	11	11	-	-	-	134
81-83	-	-	16	40	32	16	56	16	-	-	176
84-86	-	-	11	44	11	-	54	22	-	-	142
87-89	-	-	-	-	7	-	42	43	-	-	92
90-92	-	-	-	14	7	7	32	21	-	-	81
93-95	-	-	-	7	-	-	14	22	-	-	43
96-98	-	-	-	-	-	-	7	7	-	-	14
99-101	-	-	-	-	-	-	4	-	-	3	7
-	-	-	-	-	-	-	-	-	-	-	-
108-110	-	-	-	-	-	-	-	4	-	-	4
Total Number	26	15	36	348	133	49	255	135	-	3	1000
Mean Length (cm)				78.7	79.9		85.5	89.8			81.8

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	54
Number of Samples	1
Number of Fish Measured	386
No. of Fish Aged	188
Mean Length (cm)	81.8
Mean Weight (Kg)	4.3
Total Weight Landed (tons)	39
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 34 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] - Commercial Landings Serial Nos. 56/57

Location	East Greenland - Dohrn Bank													
Month	November													
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	<1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	>15	
3-cm group	FREQUENCIES in ‰													
54-56	1	-	-	-	-	-	-	-	-	-	-	-	-	1
57-59	-	2	-	-	-	-	-	-	-	-	-	-	-	2
60-62	3	-	1	-	-	-	-	-	-	-	-	-	-	4
63-65	14	4	-	-	4	-	-	-	-	-	-	-	-	22
66-68	10	-	5	-	5	-	-	-	-	-	-	-	-	20
69-71	-	7	18	28	-	-	4	-	-	-	-	-	-	57
72-74	-	21	17	22	17	4	-	-	-	-	-	-	-	81
75-77	-	10	29	57	10	6	19	3	-	-	-	-	-	134
78-80	-	3	10	57	22	10	45	6	-	-	-	-	-	153
81-83	-	3	9	36	12	27	57	6	-	-	-	-	-	150
84-86	-	-	3	3	24	15	38	3	-	3	-	-	-	89
87-89	-	-	-	6	6	12	58	18	3	-	-	3	-	106
90-92	-	-	2	5	5	2	27	14	-	2	-	2	-	59
93-95	-	-	-	6	-	3	42	-	-	9	-	-	-	60
96-98	-	-	-	3	-	-	25	6	-	3	-	-	-	37
99-101	-	-	-	-	-	5	-	-	-	2	-	3	4	14
102-104	-	-	-	-	-	-	-	-	3	-	-	3	-	6
105-107	-	-	-	-	-	-	-	2	-	-	-	1	1	4
108-110	-	-	-	-	-	-	-	-	-	1	-	-	-	1
Total Number	28	50	94	223	105	84	315	58	6	20	-	12	5	1000
Mean Length (cm)				78.7	79.9		86.6							81.7

[1] The length frequencies of these samples are given in Table 13; the age frequencies are given in Table 26.
[2] 500-900 gross tons.

SAMPLE DATA

Sample Serial Numbers	56/57
Number of Samples	2
Number of Fish Measured	777
No. of Fish Aged	190
Mean Length (cm)	81.7
Mean Weight (Kg)	4.1
Total Weight Landed (tons)	105
Mesh Size (mm)	110
Range of Depths (fm)	...

TABLE 35 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer

OTTER TRAWLERS[2] - Research Catches Serial Nos. 2,3,5,9

Location	1C - Lille Hellefiske Bank								
Month	April								
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	Total
Age	3	4	5	6	7	8	9	10	
3-cm group	FREQUENCIES in ‰								
30-32	16	-	-	-	-	-	-	-	16
33-35	4	-	-	-	-	-	-	-	4
36-38	20	-	-	-	-	-	-	-	20
39-41	12	12	-	-	-	-	-	-	24
42-44	-	4	-	-	-	-	-	-	4
45-47	-	28	-	-	-	-	-	-	28
48-50	-	20	-	-	-	-	-	-	20
51-53	-	14	38	-	-	-	-	-	52
54-56	-	-	76	-	-	-	-	-	76
57-59	-	-	104	9	-	-	-	-	113
60-62	-	-	63	22	-	-	-	-	85
63-65	-	-	36	57	-	-	-	-	93
66-68	-	-	-	54	72	-	-	-	126
69-71	-	-	-	30	92	-	-	-	122
72-74	-	-	-	-	69	12	-	-	81
75-77	-	-	-	-	48	-	-	-	48
78-80	-	-	-	-	18	-	18	-	36
81-83	-	-	-	-	-	-	12	-	12
84-86	-	-	-	-	-	-	-	20	20
87-89	-	-	-	-	-	-	-	8	8
90-92	-	-	-	-	-	-	-	-	-
93-95	-	-	-	-	-	-	-	8	8
-	-	-	-	-	-	-	-	-	-
111-113	-	-	-	-	-	-	-	4	4
Total Number	52	78	317	172	299	12	30	40	1000
Mean Length (cm)			58.3	65.8	72.0				63.8

[1] The length frequencies of these samples are given in Table 14; the age frequencies are given in Table 27.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	2,3,5,9
Number of Samples	4
Number of Fish Measures	248
No. of Fish Aged	83
Mean Length (cm)	63.8
Mean Weight (Kg)	
Total Weight Landed (tons)	
Mesh Size (mm)	110
Range of Depths (fm)	75-100

TABLE 35 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)
OTTER TRAWLERS[2] - Research Catches Serial Nos. 10-12

Location	1D - Fyllas Bank										
Month	April										
Year-Class	1956	1955	1954	1953	1952	1951	1950	-	1945	<1945	Total
Age	4	5	6	7	8	9	10	-	15	>15	
3-cm group	FREQUENCIES in ‰										
36-38	5	-	-	-	-	-	-	-	-	-	5
-	-	-	-	-	-	-	-	-	-	-	-
45-47	14	-	-	-	-	-	-	-	-	-	14
48-50	23	-	-	-	-	-	-	-	-	-	23
51-53	-	-	14	-	-	-	-	-	-	-	14
54-56	9	-	-	-	-	-	-	-	-	-	9
57-59	-	23	-	23	-	-	-	-	-	-	46
60-62	-	-	49	24	-	-	-	-	-	-	73
63-65	-	-	32	96	32	-	-	-	-	-	160
66-68	-	-	30	124	10	10	-	-	-	-	174
69-71	-	-	15	153	-	-	15	-	-	-	183
72-74	-	-	18	74	-	-	18	-	-	-	110
75-77	-	-	-	20	39	10	-	-	-	-	69
78-80	-	-	-	33	17	-	-	-	-	-	50
81-83	-	-	-	-	-	37	-	-	-	-	37
84-86	-	-	-	-	14	-	-	-	-	-	14
87-89	-	-	-	-	5	-	-	-	-	-	5
90-92	-	-	-	-	-	-	-	-	9	-	9
93-95	-	-	-	-	-	-	-	-	-	5	5
Total Number	51	23	158	547	117	57	33	-	9	5	1000
Mean Length (cm)			64.7	69.0	74.5						68.7

[1] The length frequencies of these samples are given in Table 14; the age frequencies are given in Table 27.
[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	10-12
Number of Samples	3
Number of Fish Measured	218
No. of Fish Aged	78
Mean Length (cm)	68.7
Mean Weight (Kg)	
Total Weight Landed (tons)	
Mesh Size (mm)	110
Range of Depths (fm)	80-160

TABLE 35 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)
OTTER TRAWLERS[2] - Research Catches Serial Nos. 10-12

Location	1D - Fyllas Bank										
Month	April										
Year-Class	1956	1955	1954	1953	1952	1951	1950	-	1945	<1945	Total
Age	4	5	6	7	8	9	10	-	15	>15	
3-cm group	FREQUENCIES in ‰										
36-38	5	-	-	-	-	-	-	-	-	-	5
-	-	-	-	-	-	-	-	-	-	-	-
45-47	14	-	-	-	-	-	-	-	-	-	14
48-50	23	-	-	-	-	-	-	-	-	-	23
51-53	-	-	14	-	-	-	-	-	-	-	14
54-56	9	-	-	-	-	-	-	-	-	-	9
57-59	-	23	-	23	-	-	-	-	-	-	46
60-62	-	-	49	24	-	-	-	-	-	-	73
63-65	-	-	32	96	32	-	-	-	-	-	160
66-68	-	-	30	124	10	10	-	-	-	-	174
69-71	-	-	15	153	-	-	15	-	-	-	183
72-74	-	-	18	74	-	-	18	-	-	-	110
75-77	-	-	-	20	39	10	-	-	-	-	69
78-80	-	-	-	33	17	-	-	-	-	-	50
81-83	-	-	-	-	-	37	-	-	-	-	37
84-86	-	-	-	-	14	-	-	-	-	-	14
87-89	-	-	-	-	5	-	-	-	-	-	5
90-92	-	-	-	-	-	-	-	-	9	-	9
93-95	-	-	-	-	-	-	-	-	-	5	5
Total Number	51	23	158	547	117	57	33	-	9	5	1000
Mean Length (cm)			64.7	69.0	74.5						68.7

1) The length frequencies of these samples are given in Table 14; the age frequencies are given in Table 27.
2) 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	10-12
Number of Samples	3
Number of Fish Measured	218
No. of Fish Aged	78
Mean Length (cm)	68.7
Mean Weight (Kg)	
Total Weight Landed (tons)	
Mesh Size (mm)	110
Range of Depths (fm)	80-160

TABLE 35 GERMANY - 1960 (cont'd.)

AGE/LENGTH FREQUENCIES - COD[1)]

by Arno Meyer

OTTER TRAWLERS[2)] - Research Catches

Serial Nos. 18-20

Location	1E - Danas Bank										
Month	April										
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	Total
Age	4	5	6	7	8	9	10	11	12	13	
3-cm group	FREQUENCIES in ‰										
36-38	5	-	-	-	-	-	-	-	-	-	5
39-41	5	-	-	-	-	-	-	-	-	-	5
42-44	47	-	-	-	-	-	-	-	-	-	47
45-47	98	-	-	-	-	-	-	-	-	-	98
48-50	90	-	-	-	-	-	-	-	-	-	90
51-53	66	-	-	-	-	-	-	-	-	-	66
54-56	22	-	-	11	-	-	-	-	-	-	33
57-59	-	23	-	24	-	-	-	-	-	-	47
60-62	-	17	35	-	-	-	-	-	-	-	52
63-65	-	-	14	43	-	-	-	-	-	-	57
66-68	-	12	-	106	-	-	-	-	-	-	118
69-71	-	-	-	76	22	-	11	-	-	-	109
72-74	-	-	-	99	-	-	-	-	-	-	99
75-77	-	-	-	10	37	10	10	-	-	-	67
78-80	-	-	-	21	27	-	-	-	-	-	42
81-83	-	-	-	6	6	-	11	-	-	-	23
84-86	-	-	-	-	10	-	-	-	-	9	19
87-89	-	-	-	-	-	6	6	-	6	-	18
90-92	-	-	-	-	-	-	-	-	-	5	5
Total Number	333	52	49	396	96	16	38	-	6	14	1000
Mean Length (cm)	48.4			69.5							63.3

1) The length frequencies of these samples are given in Table 14; the age frequencies are given in Table 27.

2) 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	18-20
Number of Samples	3
Number of Fish Measured	212
No. of Fish Aged	83
Mean Length (cm)	63.3
Mean Weight (Kg)	
Total weight Landed (tons)	
Mesh Size (mm)	110
Range of Depths (fm)	40-120

TABLE 35 GERMANY - 1960 AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer
(cont'd.)

OTTER TRAWLERS[2] - Research Catches Serial Nos. 38-41

Location	1F - Nanortalik Bank											
Month	May											
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	<1947	Total
Age	4	5	6	7	8	9	10	11	12	13	>13	
3-cm group	FREQUENCIES in ‰											
33-35	4	-	-	-	-	-	-	-	-	-	-	14
36-38	7	-	-	-	-	-	-	-	-	-	-	7
39-41	42	-	-	-	-	-	-	-	-	-	-	42
42-44	122	8	-	-	-	-	-	-	-	-	-	130
45-47	37	9	-	-	-	-	-	-	-	-	-	46
48-50	32	-	10	-	-	-	-	-	-	-	-	42
51-53	28	-	-	-	-	-	-	-	-	-	-	28
54-56	-	11	-	-	-	-	-	-	-	-	-	11
57-59	-	-	-	39	-	-	-	-	-	-	-	39
60-62	-	-	-	63	-	-	-	-	-	-	-	63
63-65	-	-	-	32	31	-	-	-	-	-	-	63
66-68	-	-	-	61	15	15	-	-	-	-	-	91
69-71	-	-	-	99	14	-	-	-	-	-	-	113
72-74	-	-	-	67	9	-	9	-	-	-	-	85
75-77	-	-	-	25	-	24	25	-	-	-	-	74
78-80	-	-	-	-	-	22	33	-	-	11	11	77
81-83	-	-	-	-	-	-	29	10	-	10	-	49
84-86	-	-	-	-	-	-	-	-	-	18	-	18
87-89	-	-	-	-	-	-	-	-	-	11	-	11
90-92	-	-	-	-	-	-	-	-	-	7	-	7
Total Number	272	28	10	386	69	61	96	10	-	57	11	1000
Mean Length (cm)	44.8			67.8			79.1					63.6

[1] The length frequencies of these samples are given in Table 14; the age frequencies are given in Table 27.

[2] 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	38-41
Number of Samples	4
Number of Fish Measured	284
No. of Fish Aged	102
Mean Length (cm)	63.6
Mean Weight (Kg)	
Total Weight Landed (tons)	
Mesh Size (mm)	110
Range of Depths (fm)	160-270

TABLE 35 GERMANY - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1)] by Arno Meyer

OTTER TRAWLERS[2)] - Research Catches Serial Nos. 58-73

Location	East Greenland - Discord-Fylkir Bank														
Month	May														
Year-Class	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	<1942	Total
Age	6	7	8	9	10	11	12	13	14	15	16	17	18	>18	
3-cm group	FREQUENCIES in ‰														
54-56	15	-	-	-	-	-	-	-	-	-	-	-	-	-	15
57-59	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60-62	-	8	-	-	-	-	-	-	-	-	-	-	-	-	8
63-65	-	8	-	-	-	-	-	-	-	-	-	-	-	-	8
66-68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
69-71	-	23	-	-	8	-	-	8	-	-	-	-	-	-	39
72-74	-	-	-	15	8	-	-	16	-	-	-	-	-	-	39
75-77	-	8	8	8	30	8	-	31	-	-	-	8	-	-	101
78-80	-	7	7	29	64	15	22	37	22	22	-	-	-	-	225
81-83	-	-	-	-	28	24	-	24	-	8	-	8	16	-	108
84-86	-	-	-	24	8	-	8	36	-	16	-	8	8	8	116
87-89	-	-	-	8	30	-	-	30	-	24	-	-	16	-	108
90-92	-	-	-	-	16	8	8	22	-	8	-	-	-	-	62
93-95	-	-	-	-	9	-	-	9	9	26	-	-	9	-	62
96-98	-	-	-	-	-	-	-	-	-	5	-	5	13	-	23
99-101	-	-	-	-	21	-	-	-	-	-	-	-	10	-	31
102-104	-	-	-	-	5	-	-	-	-	5	-	-	5	-	15
105-107	-	-	-	-	-	-	-	-	8	-	-	-	-	-	8
>107	-	-	-	-	-	-	-	-	-	-	-	8	16	8	32
Total Number	15	54	15	84	227	55	38	213	39	114	-	37	93	16	1000
Mean Length (cm)				84.3			82.8		88.3						85.0

1) The length frequencies of these samples are given in Table 14; the age frequencies are given in Table 27.

2) 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	58-73
Number of Samples	6
Number of Fish Measured	129
No. of Fish Aged	129
Mean Length (cm)	85.6
Mean Weight (Kg)	
Total Weight Landed (tons)	
Mesh Size (mm)	110
Range of Depths (fm)	100-200

TABLE 35 GERMANY - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1] by Arno Meyer

OTTER TRAWLERS[2] - Research Catches Serial Nos. 77-119

Location	East Greenland - Mosting Bank													
Month	May													
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	<1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	>15	
3-cm group	FREQUENCIES in °/oo													
39-41	6	-	-	-	-	-	-	-	-	-	-	-	-	6
42-44	11	-	-	-	-	-	-	-	-	-	-	-	-	11
45-47	14	-	-	-	-	-	-	-	-	-	-	-	-	14
48-50	4	-	-	-	-	-	-	-	-	-	-	-	-	4
51-53	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54-56	-	4	-	-	-	-	-	-	-	-	-	-	-	4
57-59	-	-	4	-	-	-	-	-	-	-	-	-	-	4
60-62	-	-	8	-	-	-	-	-	-	-	-	-	-	8
63-65	-	-	18	8	8	8	-	-	-	-	-	-	-	42
66-68	-	-	14	14	27	-	-	-	-	-	14	-	-	69
69-71	-	-	-	49	9	9	9	-	-	-	-	-	-	76
72-74	-	-	-	54	13	13	26	-	-	-	-	-	-	106
75-77	-	-	-	14	-	14	71	-	-	42	-	-	-	141
78-80	-	-	-	43	-	-	28	-	14	43	-	-	-	128
81-83	-	-	-	-	-	20	79	-	-	20	-	-	-	119
84-86	-	-	-	-	10	-	20	10	-	40	-	-	-	80
87-89	-	-	-	-	-	-	47	-	-	15	-	-	15	77
90-92	-	-	-	-	-	-	18	-	-	-	-	18	-	36
93-95	-	-	-	-	-	-	29	-	-	-	-	-	-	29
96-98	-	-	-	-	-	-	-	8	-	-	-	-	-	8
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-	-	4	-	4
105-107	-	-	-	-	-	-	-	-	-	-	-	-	4	4
>107	-	-	-	-	-	-	-	-	-	-	-	-	30	30
Total Number	35	4	44	182	67	64	327	18	14	160	14	22	49	1000
Mean Length (cm)				73.5			82.5			81.5				79.1

1) The length frequencies of these samples are given in Table 14; the age frequencies are given in Table 27.

2) 500-900 gross tons.

(cont'd.)

SAMPLE DATA

Sample Serial Numbers	77-119
Number of Samples	4
Number of Fish Measured	275
No. of Fish Aged	76
Mean Length (cm)	79.1
Mean Weight (Kg)	
Total Weight Landed (tons)	
Mesh Size (mm)	110
Range of Depths (fm)	130-200

TABLE 35 GERMANY - 1960 (cont'd.)

AGE/LENGTH FREQUENCIES - COD[1)]

by Arno Meyer

OTTER TRAWLERS[2)] Research Catches

Serial Nos. 121+128

Location	East Greenland - Angmagssalik								
Month	May								
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	Total
Age	4	5	6	7	8	9	10	11	
3-cm group	FREQUENCIES in ‰								
54-56	12	-	-	-	-	-	-	-	12
57-59	12	-	-	-	-	-	-	-	12
60-62	-	12	36	-	-	-	-	-	48
63-65	-	59	24	-	-	-	-	-	83
66-68	-	48	59	12	-	-	-	-	119
69-71	-	24	83	24	12	12	-	-	155
72-74	-	13	76	65	-	-	13	-	167
75-77	-	-	28	39	-	14	14	-	95
78-80	-	-	26	13	-	13	54	13	119
81-83	-	-	12	12	-	12	35	-	71
84-86	-	-	-	15	-	-	44	-	59
87-89	-	-	-	-	-	-	12	-	12
90-92	-	-	-	-	-	-	36	-	36
93-95	-	-	-	-	-	-	12	-	12
Total Number	24	156	344	180	12	51	220	13	1000
Mean Length (cm)		66.9	70.9	75.4			83.9		74.0

1) The length frequencies of these samples are given in Table 14; the age frequencies are given in Table 27.

2) 500-900 gross tons.

SAMPLE DATA

Sample Serial Numbers	121 128
Number of Samples	2
Number of Fish Measured	84
No. of Fish Aged	84
Mean Length (cm)	74.0
Mean Weight (Kg)	
Total Weight Landed (tons)	
Mesh Size (mm)	110
Range of Depths (fm)	240

TABLE 36 NORWAY - 1960 AGE/LENGTH KEY - COD[1] by E. Bratberg

Male OTTER TRAWL - Research Catches 1C & 1D April

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ												
39-41	1	-	-	-	-	-	-	-	-	-	-	-	1
42-44	3	-	-	-	-	-	-	-	-	-	-	-	3
45-47	11	1	-	-	-	-	-	-	-	-	-	-	12
48-50	17	3	-	-	-	-	-	-	-	-	-	-	20
51-53	11	6	1	-	-	-	-	-	-	-	-	-	18
54-56	1	5	-	-	-	-	-	-	-	-	-	-	6
57-59	-	5	-	-	-	-	-	-	-	-	-	-	5
60-62	-	1	4	1	-	-	-	-	-	-	-	-	6
63-65	-	1	1	4	-	-	-	-	-	-	-	-	6
66-68	-	1	-	6	-	-	-	1	-	-	-	-	8
69-71	-	-	2	4	3	-	-	-	-	-	-	-	9
72-74	-	-	-	4	2	1	1	-	-	-	-	-	8
75-77	-	-	-	1	1	1	-	-	-	-	1	-	4
Total Number	44	23	8	20	6	2	1	1	-	-	1	-	106
Mean Length													57.27

Female OTTER TRAWL - Research Catches 1C & 1D April

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ												
39-41	1	-	-	-	-	-	-	-	-	-	-	-	1
42-44	3	-	-	-	-	-	-	-	-	-	-	-	3
45-47	12	1	-	-	-	-	-	-	-	-	-	-	13
48-50	22	1	-	-	-	-	-	-	-	-	-	-	23
51-53	14	-	1	-	-	-	-	-	-	-	-	-	15
54-56	4	4	-	-	-	-	-	-	-	-	-	-	8
57-59	1	3	1	-	-	-	-	-	-	-	-	-	5
60-62	-	-	3	1	-	-	-	-	-	-	-	-	4
63-65	-	-	2	1	-	-	-	-	-	-	-	-	3
66-68	-	-	3	3	-	-	-	-	-	-	-	-	6
69-71	-	-	-	6	-	-	-	-	-	-	-	-	6
72-74	-	-	2	7	2	1	-	-	-	-	-	-	12
75-77	-	-	-	6	-	-	1	-	-	-	-	-	7
78-80	-	-	-	-	5	2	-	-	-	-	-	-	7
81-83	-	-	-	1	-	-	-	-	1	-	-	-	2
84-86	-	-	-	-	-	-	1	-	-	-	-	-	1
Total Number	57	9	12	25	7	3	2	-	1	-	-	-	116
Mean Length	49.07	54.00	63.92	71.80	77.00	77.00	80.00		82.00				59.11

[1] The length frequencies of these samples are given in Table 16; the age frequencies are given in Table 28.

(cont'd.)

TABLE 36 NORWAY - 1960 (cont'd.)

AGE/LENGTH KEY - COD[1)]

by E. Bratberg

Male BOTTOM LONGLINE - Research Catches 1C, 1D & 1E April

Year-Class	1956	'55	'54	'53	'52	'51	'50	'49	'48	'47	'46	'45	'44	'43	'42	'41	'40	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																	
48-50	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
51-53	1	8	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
54-56	2	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
57-59	-	1	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	7
60-62	-	3	10	5	-	1	-	-	-	-	-	-	-	-	-	-	-	19
63-65	-	3	12	21	1	-	-	-	-	-	-	-	-	-	-	-	-	37
66-68	-	2	9	32	8	-	-	1	-	-	-	-	-	-	-	-	-	52
69-71	-	-	3	29	7	3	1	-	-	-	-	-	1	-	-	-	-	44
72-74	-	-	1	31	11	4	1	-	1	3	-	1	-	-	-	-	-	53
75-77	-	-	-	15	7	3	6	2	2	3	-	3	1	-	-	-	-	42
78-80	-	-	-	6	7	2	2	-	-	3	1	2	-	-	1	-	-	24
81-83	-	-	-	4	3	-	1	1	2	5	1	1	1	1	-	-	-	20
84-86	-	-	-	2	1	-	5	2	-	2	-	1	-	1	-	-	-	14
87-89	-	-	-	-	-	-	1	-	2	-	2	2	-	-	2	-	-	9
90-92	-	-	-	-	1	1	-	-	-	-	-	-	-	2	-	-	-	4
93-95	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	1	-	3
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99-101	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2
102-104	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
Total Number	7	25	39	148	46	14	18	6	7	19	5	10	3	4	3	1	-	355
Mean Length	51.00	63.79	73.83	80.22	80.57	86.40	76.00	85.00	-	71.19								
	56.80	70.01	74.43	78.33	82.74	80.10	87.25	95.00										

1) The length frequencies of these samples are given in Table 16; the age frequencies are given in Table 28.

(cont'd.)

TABLE 36 NORWAY - 1960 AGE/LENGTH KEY - COD[1)] by E. Bratberg
(cont'd.)

Female BOTTOM LONGLINE - Research Catches 1C, 1D & 1E April

Year-Class	1956	'55	'54	'53	'52	'51	'50	'49	'48	'47	'46	'45	'44	'43	'42	'41	'40	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
3-cm group	ACTUAL NUMBER OF OTOLITHS READ																	
45-47	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
48-50	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
51-53	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
54-56	-	8	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
57-59	-	9	4	1	-	-	-	-	-	-	-	-	-	-	-	-	-	14
60-62	-	5	13	3	-	-	-	-	-	-	-	-	-	-	-	-	-	21
63-65	-	1	14	17	-	-	-	-	-	-	-	-	-	-	-	-	-	32
66-68	-	-	9	30	2	1	-	1	-	-	-	-	-	-	-	-	-	43
69-71	-	-	3	55	8	1	-	-	-	-	-	-	-	-	-	-	-	67
72-74	-	-	5	41	12	4	3	1	-	-	-	-	-	-	-	-	-	526
75-77	-	-	-	45	12	7	8	-	1	1	-	1	-	-	-	-	-	75
78-80	-	-	-	13	17	6	3	2	-	2	1	-	-	-	-	-	-	44
81-83	-	-	-	9	7	7	5	1	2	8	-	2	1	1	-	-	1	44
84-86	-	-	-	2	2	11	5	3	2	6	4	1	-	1	1	-	-	38
87-89	-	-	-	1	1	2	3	2	2	4	3	2	-	2	3	-	-	25
90-92	-	-	-	-	1	1	2	-	1	3	3	2	-	1	1	-	-	15
93-95	-	-	-	-	-	1	1	2	2	1	-	-	1	-	1	1	-	10
96-98	-	-	-	-	-	-	1	1	-	1	-	1	-	-	1	-	-	5
99-101	-	-	-	-	-	-	-	1	2	1	-	1	-	-	-	-	-	5
102-104	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	2
105-107	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
108-110	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
111-113	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
114-116	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	-	-	3
Total Number	2	25	51	217	62	41	31	14	13	29	14	10	2	5	8	1	1	526
Mean Length	47.50	63.92		76.63		81.81		90.62		90.93		88.00		92.62		81.00		
	57.56		72.01		80.51		85.71		87.48		88.10		86.20		93.00			75.29

[1)] The length frequencies of these samples are given in Table 16; the age frequencies are given in Table 28.

TABLE 37 PORTUGAL - 1960 AGE/LENGTH FREQUENCIES - COD[1)]

by Mario J. Ruivo
Glicinia V. Quartin

Serial Nos. 7-10

Male — OTTER TRAWLERS - Commercial Catches before Discarding — 1D — May

Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	
3-cm group	FREQUENCIES in °/oo												
39-41	10	10	-	-	-	-	-	-	-	-	-	-	20
42-44	-	70	-	-	-	-	-	-	-	-	-	-	70
45-47	-	120	5	-	-	-	-	-	-	-	-	-	125
48-50	-	80	5	-	-	-	-	-	-	-	-	-	85
51-53	-	40	5	-	-	-	-	-	-	-	-	-	45
54-56	-	-	20	-	-	-	-	-	-	-	-	-	20
57-59	-	-	5	-	-	-	-	-	-	-	-	-	5
60-62	-	-	5	5	5	-	-	-	-	-	-	-	15
63-65	-	-	-	5	5	10	-	-	-	-	-	-	20
66-68	-	-	-	10	25	-	-	-	-	-	-	-	35
69-71	-	-	-	-	35	-	-	-	-	-	-	-	35
72-74	-	-	-	-	20	-	-	-	-	-	-	-	20
75-77	-	-	-	-	10	-	-	-	-	-	-	-	10
-	-	-	-	-	-	-	-	-	-	-	-	-	-
84-86	-	-	-	-	-	-	5	-	-	-	-	-	5
Total Number	10	320	45	20	100	10	5	-	-	-	-	-	510
Mean Length	40.0	46.7	54.0	64.8	69.7	64.0	85.0						53.1

Female — OTTER TRAWLERS - Commercial Catches before Discarding — 1D — May

Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	
3-cm group	FREQUENCIES in °/oo												
39-41	20	15	-	-	-	-	-	-	-	-	-	-	35
42-44	-	45	-	-	-	-	-	-	-	-	-	-	45
45-47	-	50		-	-	-	-	-	-	-	-	-	50
48-50	-	65	5	-	-	-	-	-	-	-	-	-	70
51-53	-	40	25	-	-	-	-	-	-	-	-	-	65
54-56	-	15	10	-	-	-	-	-	-	-	-	-	25
57-59	-	-	10	-	-	-	-	-	-	-	-	-	10
60-62	-	-	5	-	-	-	-	-	-	-	-	-	5
63-65	-	-	-	15	5	-	-	-	-	-	-	-	20
66-68	-	-	5	-	15	-	-	-	-	-	-	-	20
69-71	-	-	-	5	10	-	-	-	-	-	-	-	15
72-74	-	-	-	5	20	5	5	-	-	-	-	-	35
75-77	-	-	-	-	10	10	-	-	-	-	-	-	20
78-80	-	-	-	-	20	5	-	-	-	-	-	-	25
81-83	-	-	-	-	20	5	-	10	-	-	-	5	40
-	-	-	-	-	-	-	-	-	-	-	-	-	-
90-92	-	-	-	-	-	-	-	-	-	5	-	5	10
Total Number	20	230	60	25	100	25	5	10	-	5	-	10	490
Mean Length	40.0	47.5	55.3	67.0	74.7	77.2	73.0	82.0	-	91.0	-	86.5	58.4

1) The length frequencies of these samples are given in Table 17; the age frequencies are given in Table 29. Sample data are shown on page 175.

(cont'd.)

TABLE 37 PORTUGAL - 1960 (cont'd.)

AGE/LENGTH FREQUENCIES - COD[1)]

by Mario J. Ruivo
Glicinia V. Quartin

Serial Nos. 6-8-9

Male — OTTER TRAWLERS - Commercial Catches before Discarding — 1E — May

Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	
3-cm group	FREQUENCIES in °/oo													
39-41	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42-44	-	54	7	-	-	-	-	-	-	-	-	-	-	61
45-47	-	67	20	-	-	-	-	-	-	-	-	-	-	87
48-50	-	40	13	-	-	-	-	-	-	-	-	-	-	53
51-53	-	3	10	-	-	-	-	-	-	-	-	-	-	13
54-56	-	-	10	-	3	-	-	-	-	-	-	-	-	13
57-59	-	-	-	7	-	-	-	-	-	-	-	-	-	7
60-62	-	-	-	3	17	-	-	-	-	-	-	-	-	20
63-65	-	-	-	3	30	-	-	-	-	-	-	-	-	33
66-68	-	-	-	23	44	-	-	-	-	-	-	-	-	67
69-71	-	-	-	3	54	-	3	-	-	-	3	-	-	63
72-74	-	-	-	3	23	3	-	3	-	3	-	-	-	35
75-77	-	-	-	-	10	3	-	3	-	3	3	-	-	22
78-80	-	-	-	-	7	-	-	-	-	-	-	-	-	7
81-83	-	-	-	-	-	3	-	10	-	-	-	-	-	13
84-86	-	-	-	-	-	-	-	3	-	3	-	-	3	9
Total Number	-	164	60	42	188	9	3	19	-	9	6	-	3	503
Mean Length		45.9	48.8	65.5	68.3	77.0	70.0	80.1	-	78.0	73.0	-	85.0	59.4

Female — OTTER TRAWLERS - Commercial Catches before Discarding — 1E — May

Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	
3-cm group	FREQUENCIES in °/oo													
39-41	-	3	-	-	-	-	-	-	-	-	-	-	-	3
42-44	3	44	-	-	-	-	-	-	-	-	-	-	-	47
45-47	-	74	-	-	-	-	-	-	-	-	-	-	-	74
48-50	-	64	3	-	-	-	-	-	-	-	-	-	-	67
51-53	-	13	20	-	-	-	-	-	-	-	-	-	-	33
54-56	-	3	10	3	-	-	-	-	-	-	-	-	-	16
57-59	-	-	17	3	7	3	-	-	-	-	-	-	-	30
60-62	-	-	-	-	10	-	-	-	-	-	-	-	-	10
63-65	-	-	-	7	10	3	-	-	-	-	-	-	-	20
66-68	-	-	-	7	37	3	-	-	-	-	-	-	-	47
69-71	-	-	-	3	20	7	3	-	-	-	-	-	-	33
72-74	-	-	-	-	10	7	-	7	-	3	-	-	-	27
75-77	-	-	-	-	7	10	-	7	-	3	-	-	-	27
78-80	-	-	-	-	-	-	3	-	-	-	-	-	-	3
81-83	-	-	-	-	3	10	-	7	3	3	3	3	-	32
84-86	-	-	-	-	-	3	-	3	-	-	3	3	-	12
87-89	-	-	-	-	-	-	-	-	-	-	-	-	-	-
90-92	-	-	-	-	-	-	-	-	-	3	-	-	-	3
93-95	-	-	-	-	-	-	-	-	-	-	3	-	-	3
Total Number	3	201	50	23	104	46	6	24	3	12	9	6	-	487
Mean Length	43.0	46.7	54.5	63.7	67.7	74.0	74.5	78.0	82.0	80.5	87.0	83.5	-	59.5

1)The length frequencies of these samples are given in Table 17; the age frequencies are given in Table 29. Sample data are shown on page 175.

(cont'd.)

TABLE 37 PORTUGAL - 1960 AGE/LENGTH FREQUENCIES - COD[1)]
(cont'd.)

by Mario J. Ruivo
Glicinia V. Quartin

Serial Nos. 1-3

Male	OTTER TRAWLERS - Commercial Catches before Discarding								1F	April
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	Total
Age	4	5	6	7	8	9	10	11	12	
3-cm group	FREQUENCIES in ‰									
39-41	5	-	-	-	-	-	-	-	-	5
42-44	25	-	-	-	-	-	-	-	-	25
45-47	15	-	-	-	-	-	-	-	-	15
48-50	15	5	-	-	-	-	-	-	-	20
51-53	-	10	-	-	-	-	-	-	-	10
54-56	-	30	5	-	-	-	-	-	-	35
57-59	-	5	5	5	-	-	-	-	-	15
60-62	-	-	25	40	10	-	-	-	-	75
63-65	-	-	20	65	10	-	-	-	-	95
66-68	-	-	-	70	5	-	-	-	-	75
69-71	-	-	5	35	15	20	-	-	-	75
72-74	-	-	5	45	20	-	5	-	-	75
75-77	-	-	-	5	10	5	5	-	-	25
78-80	-	-	-	5	-	-	-	-	-	5
Total Number	60	50	65	270	70	25	10	-	-	550
Mean Length	45.0	54.1	62.8	67.0	69.4	71.2	74.5	-	-	62.3

Female	OTTER TRAWLERS - Commercial Catches before Discarding								1F	April
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	Total
Age	4	5	6	7	8	9	10	11	12	
3-cm group	FREQUENCIES in ‰									
39-41	10	-	-	-	-	-	-	-	-	10
42-44	10	-	-	-	-	-	-	-	-	10
45-47	15	-	-	-	-	-	-	-	-	15
48-50	-	-	-	-	-	-	-	-	-	-
51-53	-	10	-	-	-	-	-	-	-	10
54-56	-	5	-	5	-	-	-	-	-	10
57-59	-	5	-	5	-	-	-	-	-	10
60-62	-	-	5	15	-	-	-	-	-	20
63-65	-	-	10	45	15	5	-	-	-	75
66-68	-	-	5	55	15	-	5	-	-	80
69-71	-	-	10	50	15	-	-	-	-	75
72-74	-	-	-	10	10	5	5	5	-	35
75-77	-	-	-	10	5	10	10	-	-	35
78-80	-	-	-	15	-	-	20	5	-	40
81-83	-	-	-	-	-	5	5	-	-	10
84-86	-	-	-	-	-	-	-	-	5	5
87-89	-	-	-	-	5	-	-	-	-	5
-	-	-	-	-	-	-	-	-	-	-
123-125	-	-	-	-	-	-	5	-	-	5
Total Number	35	20	30	210	65	25	50	10	5	450
Mean Length	43.4	54.3	66.0	67.7	70.2	74.2	81.4	76.0	85.0	67.7

1) The length frequencies of these samples are given in Table 17; the age frequencies are given in Table 29. Sample data are shown on page 175.

(cont'd.)

TABLE 37 PORTUGAL - 1960 AGE/LENGTH FREQUENCIES - COD[1)] by Mario J. Ruivo
(cont'd.) Glicinia V. Quartin

Serial Nos. 37,38,40,41

Male OTTER TRAWLERS - Commercial Catches before Discarding 2H September

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	
3-cm group	FREQUENCIES in ‰													
39-41	10	2	-	-	-	-	-	-	-	-	-	-	-	12
42-44	5	20	5	-	-	-	-	-	-	-	-	-	-	30
45-47	3	23	10	5	2	-	-	-	-	-	-	-	-	43
48-50	-	25	20	13	2	2	5	-	-	-	-	-	-	67
51-53	-	13	18	8	10	10	5	2	-	-	-	-	-	66
54-56	-	2	10	8	20	15	15	5	5	-	-	-	-	80
57-59	-	-	5	15	10	8	-	5	-	8	-	-	3	54
60-62	-	-	2	3	2	2	10	2	13	2	-	-	-	36
63-65	-	-	-	-	-	8	2	10	8	8	2	2	3	43
66-68	-	-	-	-	-	5	-	-	3	10	2	-	-	20
69-71	-	-	-	-	-	-	-	-	-	5	5	-	-	10
72-74	-	-	-	-	-	-	-	-	-	-	-	2	-	2
75-77	-	-	-	-	-	-	-	2	-	-	-	-	-	2
Total Number	18	85	70	52	46	50	37	26	29	33	9	4	6	465
Mean Length	41.8	47.2	50.8	53.4	54.6	57.5	55.9	60.9	61.4	64.2	68.0	68.5	61.0	54.3

Female OTTER TRAWLERS - Commercial Catches before Discarding 2H September

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15		
3-cm group	FREQUENCIES in ‰													
39-41	8	5	-	-	-	-	-	-	-	-	-	-	-	13
42-44	5	5	13	-	-	-	-	-	-	-	-	-	-	23
45-47	2	18	8	5	-	-	-	-	-	-	-	-	-	33
48-50	-	13	8	5	-	-	-	-	-	-	-	-	-	36
51-53	-	13	28	10	8	8	-	-	-	-	-	-	-	67
54-56	-	-	15	8	13	2	-	2	-	-	-	-	-	40
57-59	-	-	5	15	28	25	18	10	5	2	2	-	-	110
60-62	-	-	-	8	13	10	8	13	2	3	5	2	-	64
63-65	-	-	-	13	5	13	8	5	10	10	-	8	2	74
66-68	-	-	-	-	-	5	8	3	3	3	15	8	3	48
69-71	-	-	-	-	-	-	-	3	8	-	3	8	5	27
72-74	-	-	-	-	-	-	-	3	-	2	-	-	-	5
Total Number	15	54	87	64	67	63	42	39	28	20	25	26	10	540
Mean Length	41.8	47.3	50.3	56.6	57.7	59.5	61.4	62.4	64.7	64.3	65.4	66.6	67.9	57.3

[1)] The length frequencies of these samples are given in Table 17; the age frequencies are given in Table 29. Sample data are shown on page 175.

(cont'd.)

TABLE 37 PORTUGAL - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1)]

by Mario J. Ruivo
Glicinia V. Quartin

Serial No. 1

Male OTTER TRAWLERS - Commercial Catches before Discarding 2J May

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	
3-cm group	FREQUENCIES in ‰													
36-38	10	-	-	-	-	-	-	-	-	-	-	-	-	10
39-41	-	10	-	-	-	-	-	-	-	-	-	-	-	10
42-44	-	10	-	-	-	-	-	-	-	-	-	-	-	10
45-47	-	20	40	30	-	-	10	-	-	-	-	-	-	100
48-50	-	-	10	10	30	20	10	-	-	-	-	-	-	80
51-53	-	-	30	10	10	10	20	-	-	-	-	-	-	80
54-56	-	-	-	20	30	10	30	30	-	-	-	-	-	120
57-59	-	-	10	-	30	20	10	-	10	-	-	10	-	90
60-62	-	-	-	-	-	-	10	10	-	10	-	-	-	30
63-65	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66-68	-	-	-	-	-	-	-	-	-	-	10	-	-	10
69-71	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72-74	-	-	-	-	-	-	-	-	-	-	-	10	-	10
Total Number	10	40	90	70	100	60	90	40	10	10	10	20	-	550
Mean Length	37.0	43.8	49.7	49.9	53.8	53.5	53.7	56.5	58.0	61.0	67.0	65.5	-	52.7

Female OTTER TRAWLERS - Commercial Catches before Discarding 2J May

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	
3-cm group	FREQUENCIES in ‰													
45-47	-	-	10	-	-	-	-	-	-	-	-	-	-	10
48-50	-	-	-	10	-	-	10	-	-	-	-	-	-	20
51-53	-	-	-	30	-	20	-	10	-	-	-	-	-	60
54-56	-	-	-	-	20	20	10	-	-	-	10	-	-	60
57-59	-	-	-	-	20	10	40	10	10	-	-	-	-	90
60-62	-	-	-	-	20	10	40	-	10	10	-	-	-	90
63-65	-	-	-	-	-	-	-	-	-	40	-	10	-	50
66-68	-	-	-	-	-	10	10	-	10	20	-	-	-	50
69-71	-	-	-	-	-	-	-	-	10	-	10	-	-	20
Total Number	-	-	10	40	60	70	110	20	40	70	20	10	-	450
Mean Length	-	-	46.0	51.3	58.0	57.1	58.9	55.5	64.0	64.4	62.5	64.0	-	57.9

1) The length frequencies of this sample are given in Table 17; the age frequencies are given in Table 29. Sample data are shown on page 175.

(cont'd.)

TABLE 37 PORTUGAL - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1)]

by Mario J. Ruivo
Glicinia V. Quartin

Serial Nos. 2,4,7,10,12

Male	OTTER TRAWLERS - Commercial Catches before Discarding												2J		June
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
3-cm group	FREQUENCIES in ‰														
42-44	2	4	4	4	2	-	-	-	-	-	-	-	-	-	16
45-47	-	4	26	16	4	-	-	-	-	-	-	-	-	-	50
48-50	-	6	16	14	14	6	4	-	-	-	-	-	-	-	60
51-53	-	-	4	20	10	10	8	2	-	2	-	2	-	-	58
54-56	-	-	2	12	8	16	6	10	2	-	-	2	-	-	58
57-59	-	-	2	6	4	8	6	8	2	-	4	2	-	-	42
60-62	-	-	-	2	6	2	6	-	2	8	4	4	-	-	34
63-65	-	-	-	-	2	4	-	2	8	-	6	-	2	-	24
66-68	-	-	-	2	-	2	2	2	4	2	6	-	-	-	20
69-71	-	-	-	-	-	-	2	2	2	4	2	2	-	-	14
72-74	-	-	-	-	-	-	-	-	-	2	-	2	-	-	4
75-77	-	-	-	-	-	-	-	-	-	2	4	-	-	-	6
78-80	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2
Total Number	2	14	54	76	50	48	34	26	20	20	26	16	2	-	388
Mean Length	43.0	46.4	48.0	51.3	52.8	55.6	56.7	58.5	63.4	65.2	65.6	63.6	64.0	-	55.2

Female	OTTER TRAWLERS - Commercial Catches before Discarding												2J		June
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
3-cm group	FREQUENCIES in ‰														
39-41	-	4	-	-	-	-	-	-	-	-	-	-	-	-	4
42-44	-	6	2	4	-	-	-	-	-	-	-	-	-	-	12
45-47	-	2	16	10	2	-	-	-	-	-	-	-	-	-	30
48-50	-	2	20	26	10	4	6	2	-	-	-	-	-	-	70
51-53	-	2	16	34	16	18	4	10	-	-	-	-	-	-	100
54-56	-	-	2	12	24	30	16	14	4	4	-	-	-	-	106
57-59	-	-	2	20	12	18	30	10	6	2	6	2	-	-	108
60-62	-	-	-	2	4	6	12	6	6	10	8	6	-	-	60
63-65	-	-	-	2	4	-	4	6	8	6	12	8	-	2	52
66-68	-	-	-	-	4	4	-	2	2	4	6	6	-	2	30
69-71	-	-	-	-	-	2	2	4	-	4	8	6	2	-	28
72-74	-	-	-	-	-	-	-	-	2	2	-	2	-	-	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87-89	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
Total Number	-	16	58	110	76	82	74	54	28	32	42	30	4	4	610
Mean Length	-	44.5	49.3	52.2	55.2	57.0	57.4	58.0	61.6	63.3	67.6	65.4	86.5	65.5	56.6

1) The length frequencies of these samples are given in Table 17; the age frequencies are given in Table 29. Sample data are shown on page 175.

(cont'd.)

TABLE 37 PORTUGAL - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1)]

by Mario J. Ruivo
Glicinia V. Quartin

Serial Nos.13,14,16,18,22,25,26

Male OTTER TRAWLERS - Commercial Catches before Discarding 2J August

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	
3-cm group	FREQUENCIES in ‰													
36-38	-	3	-	-	-	-	-	-	-	-	-	-	-	3
39-41	10	7	3	-	-	-	-	-	-	-	-	-	-	20
42-44	7	17	1	2	-	-	-	-	-	-	-	-	-	27
45-47	2	22	12	12	-	-	-	-	-	-	-	-	-	48
48-50	-	14	12	22	3	3	1	-	-	-	-	-	-	55
51-53	-	1	17	13	16	12	10	2	1	-	-	-	-	72
54-56	-	4	10	4	12	12	3	4	-	-	-	-	-	49
57-59	-	-	4	13	20	10	16	4	9	4	-	-	-	80
60-62	-	-	-	7	9	4	10	6	6	1	1	3	-	47
63-65	-	1	3	1	-	1	9	2	1	3	-	1	1	23
66-68	-	-	-	-	-	3	1	1	-	1	-	-	-	6
69-71	-	-	-	-	-	-	-	1	2	-	2	-	-	5
72-74	-	-	-	-	-	1	-	-	-	-	-	-	-	1
75-77	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78-80	-	-	-	-	-	1	-	-	2	-	-	-	-	3
Total Number	19	69	62	74	60	47	50	20	19	11	3	4	1	439
Mean Length	41.7	45.7	50.9	52.1	55.8	56.8	58.3	59.3	60.2	64.5	67.0	61.7	64.0	53.4

Female OTTER TRAWLERS - Commercial Catches before Discarding 2J August

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	*	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16		
3-cm group	FREQUENCIES in ‰														
36-38	1	-	-	-	-	-	-	-	-	-	-	-	-		1
39-41	9	6	3	-	-	-	-	-	-	-	-	-	-		18
42-44	4	7	10	2	-	-	-	-	-	-	-	-	-		23
45-47	3	13	20	10	-	-	-	-	-	-	-	-	-		46
48-50	3	14	22	9	10	-	-	2	2	-	-	-	-		62
51-53	-	7	13	22	7	12	3	-	-	1	-	-	-		65
54-56	-	6	4	20	22	20	6	4	1	-	1	-	-		84
57-59	-	3	1	16	16	10	7	12	6	-	-	-	-		71
60-62	-	-	-	9	19	16	4	4	7	-	3	1	1		64
63-65	-	-	-	4	7	10	12	9	7	6	4	2	3		64
66-68	-	-	-	1	1	3	3	6	7	3	7	3	-		34
69-71	-	-	-	-	-	1	2	-	3	2	2	1	-		11
72-74	-	-	-	-	-	-	-	-	3	1	1	2	2		9
75-77	-	-	-	1	-	1	1	-	-	1	-	1	-		5
-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
90-92	-	-	-	-	-	-	-	-	2	-	-	-	-		2
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-		-
96-98	-	-	-	-	-	-	-	-	-	-	1	-	-	1*	2
Total Number	20	56	73	94	82	73	38	37	38	14	19	10	6	*	561
Mean Length	42.7	48.0	47.9	54.3	56.9	58.4	61.0	60.4	64.6	66.1	67.0	68.2	66.5	*	56.1

1) The length frequencies of these samples are given in Table 17; the age frequencies are given in Table 29. Sample data are shown on page 175.

* Year-Class, 1943; Length, 96-98 cm; Total Number, 1; Mean Length, 97.0

TABLE 37 PORTUGAL - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1)]

by Mario J. Ruivo
Glicinia V. Quartin

Serial Nos. 29,31,34,35

Male — OTTER TRAWLERS - Commercial Catches before Discarding — 2J — September

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
3-cm group	FREQUENCIES in ‰														
36-38	3	2	-	-	-	-	-	-	-	-	-	-	-	-	5
39-41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42-44	2	13	5	-	-	-	-	-	-	-	-	-	-	-	20
45-47	-	20	20	2	-	-	-	-	-	-	-	-	-	-	42
48-50	3	8	7	13	5	2	-	-	-	-	-	-	-	-	38
51-53	-	5	20	25	28	2	5	-	-	2	-	-	-	-	87
54-56	-	2	13	20	18	8	8	8	-	-	-	-	-	-	77
57-59	-	-	-	13	13	5	13	-	5	5	5	-	-	-	59
60-62	-	-	-	5	-	5	-	7	8	8	5	8	3	-	49
63-65	-	-	-	-	5	-	2	-	2	10	5	-	5	-	29
66-68	-	-	-	-	2	-	-	-	5	3	3	5	2	-	20
69-71	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3
Total Number	8	50	65	78	71	22	28	15	23	28	18	13	10	-	429
Mean Length	43.8	46.3	49.7	53.7	54.9	56.2	56.5	57.8	63.1	61.5	62.0	63.3	63.7	-	54.6

Female — OTTER TRAWLERS - Commercial Catches before Discarding — 2J — September

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total
Age															
3-cm group	FREQUENCIES in ‰														
39-41	5	7	-	-	-	-	-	-	-	-	-	-	-	-	12
42-44	10	13	5	-	-	-	-	-	-	-	-	-	-	-	28
45-47	3	13	15	5	2	-	-	-	-	-	-	-	-	-	38
48-50	2	8	18	18	13	2	-	-	-	-	-	-	-	-	61
51-53	-	7	13	25	18	5	2	-	-	2	-	-	-	-	72
54-56	-	-	10	15	20	13	8	13	-	-	-	-	-	-	79
57-59	-	-	5	23	15	18	5	18	2	8	-	-	-	-	94
60-62	-	2	2	8	15	20	18	2	8	-	18	2	-	-	95
63-65	-	-	-	2	2	7	-	8	-	10	2	2	-	2	35
66-68	-	-	-	2	5	-	7	2	10	2	5	-	-	-	33
69-71	-	-	-	-	-	-	-	-	2	-	5	2	5	-	14
72-74	-	-	-	-	-	-	-	2	-	-	-	-	2	-	4
75-77	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
78-80	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87-89	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
Total Number	20	50	68	98	90	65	40	45	24	22	34	6	7	2	571
Mean Length	43.3	46.3	50.4	54.3	55.7	58.2	60.0	59.4	66.3	61.0	65.3	65.0	70.9	64.0	57.2

1)The length frequencies of these samples are given in Table 17; the age frequencies are given in Table 29. Sample data are shown on page 175.

(cont'd.)

TABLE 37 PORTUGAL - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1)]

by Mario J. Ruivo
Glicinia V. Quartin

Serial No. 42

Male OTTER TRAWLERS - Commercial Catches before Discarding 2J October

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	
3-cm group	FREQUENCIES in ‰													
42-44	10	-	-	-	-	-	-	-	-	-	-	-	-	10
45-47	10	-	-	10	-	-	-	-	-	-	-	-	-	20
48-50	10	-	40	30	10	20	-	-	-	-	-	-	-	110
51-53	20	-	-	30	10	10	-	-	-	-	-	-	-	70
54-56	10	-	-	10	30	-	20	-	-	10	-	-	-	80
57-59	-	-	-	-	10	30	-	20	30	-	-	-	-	90
60-62	-	-	-	10	-	-	10	10	10	-	10	10	-	60
63-65	-	-	-	-	10	-	-	-	10	-	10	10	-	40
66-68	-	-	-	-	-	-	-	-	-	10	-	-	-	10
69-71	-	-	-	-	-	-	-	-	-	10	10	-	-	20
Total Number	60	-	40	90	70	60	30	30	50	30	30	20	-	510
Mean Length	49.5	-	49.0	51.7	55.4	54.0	57.0	59.0	59.8	64.0	65.0	62.1	-	55.5

Female OTTER TRAWLERS - Commercial Catches before Discarding 2J October

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	
3-cm group	FREQUENCIES in ‰													
45-47	10	-	10	-	-	-	-	-	-	-	-	-	-	20
48-50	10	-	30	20	-	-	10	-	-	-	-	-	-	70
51-53	-	10	20	10	10	-	-	-	-	-	-	-	-	50
54-56	-	-	10	20	50	70	10	10	-	-	-	-	-	170
57-59	-	-	-	10	10	10	10	-	-	-	-	-	-	40
60-62	-	-	-	10	-	-	-	10	20	10	-	10	10	70
63-65	-	-	-	-	-	20	-	10	-	-	-	10	-	40
66-68	-	-	-	-	-	-	-	-	10	10	-	-	-	20
69-71	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72-74	-	-	-	-	-	-	-	-	-	-	-	-	10	10
Total Number	20	10	70	70	70	100	30	30	30	20	-	20	20	490
Mean Length	47.5	52.0	50.3	54.1	55.0	57.1	54.0	60.0	63.0	64.0	-	62.5	70.2	56.2

[1)] The length frequencies of these samples are given in Table 17; the age frequencies are given in Table 29. The sample data are shown on page 175.

(cont'd.)

TABLE 37 PORTUGAL - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1)]

by Mario J. Ruivo
Glicinia V. Quartin

Serial Nos. 43,44,46,48

Male — OTTER TRAWLERS - Commercial Catches before Discarding — 2J — November

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3-cm group	FREQUENCIES in ‰															
39-41	-	7	2	-	-	-	-	-	-	-	-	-	-	-	-	9
42-44	5	5	2	-	-	-	-	-	-	-	-	-	-	-	-	12
45-47	-	10	5	2	2	-	-	-	-	-	-	-	-	-	-	19
48-50	-	10	3	-	-	-	-	-	-	-	-	-	-	-	-	13
51-53	-	10	18	7	5	-	2	-	-	-	-	-	-	-	-	42
54-56	-	13	18	15	13	15	10	-	-	-	-	-	-	-	-	84
57-59	-	-	5	13	15	10	10	5	3	-	-	-	-	-	-	61
60-62	-	-	5	15	20	18	13	2	5	3	-	5	-	-	-	86
63-65	-	-	2	10	8	10	18	-	10	3	8	3	-	-	-	72
66-68	-	-	-	-	5	7	5	10	10	-	8	2	-	-	-	47
69-71	-	-	-	5	2	-	2	3	-	2	2	-	3	-	-	19
72-74	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	5
75-77	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3
78-80	-	-	-	-	-	-	3	-	-	-	-	-	2	-	-	5
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
Total Number	5	55	60	67	70	60	63	20	33	8	18	13	5	-	3	480
Mean Length	43.0	48.6	53.2	58.5	59.2	60.3	61.7	64.4	65.1	65.0	66.2	66.1	74.6	-	94.0	58.9

Female — OTTER TRAWLERS - Commercial Catches before Discarding — 2J — November

Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	Total
Age	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
3-cm group	FREQUENCIES in ‰															
36-38	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
39-41	2	-	3	-	-	-	-	-	-	-	-	-	-	-	-	5
42-44	8	-	2	-	-	-	-	-	-	-	-	-	-	-	-	10
45-47	-	13	3	3	-	-	-	-	-	-	-	-	-	-	-	19
48-50	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	4
51-53	-	13	15	2	10	-	-	-	-	-	-	-	-	-	-	40
54-56	-	5	25	15	10	2	-	2	-	-	-	3	-	-	-	62
57-59	-	-	10	13	15	8	8	-	2	-	-	-	-	-	-	56
60-62	-	-	5	8	28	20	15	5	8	2	-	-	-	-	-	91
63-65	-	-	-	7	18	28	15	18	10	8	-	2	-	-	-	106
66-68	-	-	3	2	2	10	5	5	13	10	5	3	-	-	-	58
69-71	-	-	-	-	-	-	-	-	8	2	8	2	3	-	-	23
72-74	-	-	-	-	-	5	5	3	2	-	5	-	-	-	-	20
75-77	-	-	-	-	-	-	-	2	-	-	2	-	-	-	2	6
78-80	-	-	-	-	-	-	-	5	3	-	-	-	-	-	-	8
81-83	-	-	-	-	-	-	-	-	2	-	-	-	2	-	-	4
84-86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87-89	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	3
90-92	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3
Total Number	15	31	68	50	83	73	48	35	53	28	20	10	5	-	2	521
Mean Length	42.5	50.0	53.9	58.0	59.5	63.2	63.3	65.0	68.9	69.5	70.9	64.0	76.0	-	76.0	61.2

[1)] The length frequencies of these samples are given in Table 17; the age frequencies are given in Table 29. Sample data are shown on page 175.

(cont'd.)

TABLE 37 PORTUGAL - 1960 (cont'd.) SAMPLE DATA

by Mario J. Ruivo
Glicinia V. Quartin

OTTER TRAWLERS - Commercial Catches before Discarding

Division	1D	1E	1F	2H	2J
Month	May	May	April	September	May
Serial Numbers	7-10	6-8-9	1-3	37,38,40,41	1
Number of Samples	2	3	2	4	1
Number of Fish	200	299	200	397	100
Mean Age	5.2	6.1	6.9	8.5	9.2
Mean Length (cm)	55.5	59.7	65.4	55.8	55.7
Mesh Size (mm)	114	114	114	114	114
Range of Depths (m)	65-100	160-200	130-150	196-256	320

OTTER TRAWLERS - Commercial Catches before Discarding

Division	2J				
Month	June	August	September	October	November
Serial Numbers	2,4,7,10,12	13,14,16,18,22,25,26	29,31,34,35	42	43,44,46,48
Number of Samples	5	7	4	1	4
Number of Fish	499	696	399	100	398
Mean Age	9.3	8.1	8.6	8.9	9.3
Mean Length (cm)	56.1	54.8	55.9	55.9	60.1
Mesh Size (mm)	114	114	114	114	114
Range of Depths (m)	230-300	183-228	210-265	146	201-310

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1)] by V J Travin, E M Mankevich

OTTER TRAWLERS - Exploratory Catches

Location	1C												
Month	April												
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1947	1944	<1944	Total	No. of
Age	3	4	5	6	7	8	9	10	13	16	>16		Otoliths
3-cm group	FREQUENCIES in ‰												Read
33-35	2	-	-	-	-	-	-	-	-	-	-	2	1
36-38	1	-	-	-	-	-	-	-	-	-	-	1	1
39-41	1	1	-	-	-	-	-	-	-	-	-	2	2
42-44	1	6	-	-	-	-	-	-	-	-	-	7	7
45-47	-	9	2	-	-	-	-	-	-	-	-	11	10
48-50	-	13	2	-	-	-	-	-	-	-	-	15	7
51-53	-	14	9	-	-	-	-	-	-	-	-	23	8
54-56	-	11	20	9	-	-	-	-	-	-	-	40	18
57-59	-	3	54	13	3	-	-	-	-	-	-	73	50
60-62	-	3	47	27	16	-	-	-	-	-	-	93	34
63-65	-	-	23	73	36	4	-	-	-	-	-	136	41
66-68	-	-	11	57	95	4	-	-	-	-	-	167	44
69-71	-	-	-	37	100	5	-	-	-	-	-	142	27
72-74	-	-	-	24	88	4	-	-	-	-	-	116	29
75-77	-	-	-	-	-	18	36	18	-	-	-	72	4
78-80	-	-	-	-	38	-	-	-	-	-	-	38	2
81-83	-	-	-	-	14	-	-	-	13	-	-	27	2
84-86	-	-	-	-	4	-	4	-	-	6	-	14	3
87-89	-	-	-	-	-	-	-	-	-	-	5	5	
90-92	-	-	-	-	-	-	-	-	-	-	6	6	
93-95	-	-	-	-	-	-	-	-	-	-	4	4	
96-98	-	-	-	-	-	-	-	-	-	-	3	3	
99-101	-	-	-	-	-	-	-	-	-	-	-	-	
102-104	-	-	-	-	-	-	-	-	-	-	1	1	
105-107	-	-	-	-	-	-	-	-	-	-	1	1	
108-110	-	-	-	-	-	-	-	-	-	-	1	1	
Total Number	5	60	168	240	394	35	40	18	13	6	21	1000	
Mean Length (cm)	37.99	50.68	59.35	65.53	70.42	72.46	77.11	76.00	82.00	85.00	93.34		
No. of Otoliths Read	4	34	79	73	89	5	3	1	1	1			290

1) The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	1
Number Fish Measured	1962
Mean Length (cm)	67.18
Mean Weight (Kg)	2.44
Mean Age	6.6
Range of Depths (fm)	82-148

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1)]

(cont'd.)

by V.I.Travin
E.M.Mankevich

OTTER TRAWLERS - Exploratory Catches

Location	1C															
Month	May															
Year-Class	>1956	1956	1955	1954	1953	1952	1951	1950	1948	1947	1946	1945	1944	<1944	Total	No. of Otoliths Read
Age	<4	4	5	6	7	8	9	10	12	13	14	15	16	>16		
3-cm group	FREQUENCIES in ‰															
30-32	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
33-35	6	-	-	-	-	-	-	-	-	-	-	-	-	-	6	
36-38	17	-	-	-	-	-	-	-	-	-	-	-	-	-	17	
39-41	13	-	-	-	-	-	-	-	-	-	-	-	-	-	13	
42-44	-	21	-	-	-	-	-	-	-	-	-	-	-	-	21	1
45-47	-	11	8	-	-	-	-	-	-	-	-	-	-	-	19	5
48-50	-	18	7	4	-	-	-	-	-	-	-	-	-	-	29	8
51-53	-	27	12	-	-	-	-	-	-	-	-	-	-	-	39	10
54-56	-	6	31	-	-	-	-	-	-	-	-	-	-	-	37	6
57-59	-	4	30	23	-	-	-	-	-	-	-	-	-	-	57	15
60-62	-	-	23	54	18	-	-	-	-	-	-	-	-	-	95	21
63-65	-	-	11	44	58	9	-	-	-	-	-	-	-	-	122	44
66-68	-	-	4	34	98	4	-	-	-	-	-	-	-	-	140	33
69-71	-	-	-	15	106	19	-	4	-	-	-	-	-	-	144	38
72-74	-	-	-	4	89	4	-	11	-	-	-	-	-	-	108	28
75-77	-	-	-	-	29	3	6	10	3	3	-	-	-	-	54	17
78-80	-	-	-	-	12	8	4	8	6	2	-	-	-	-	40	20
81-83	-	-	-	-	-	3	12	6	-	-	-	-	3	-	24	8
84-86	-	-	-	-	-	-	3	-	3	-	3	6	-	-	15	5
87-89	-	-	-	-	-	2	2	2	-	-	-	2	-	-	8	4
90-92	-	-	-	-	-	-	-	6	-	-	-	-	-	-	6	1
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2	
96-98	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
102-104														1	1	
Total Number	37	87	126	178	410	52	27	47	12	5	3	8	3	5	1000	
Mean Length (cm)	37.15	49.00	56.83	63.28	69.37	72.22	80.89	78.61	79.51	77.14	85.00	85.87	82.00	97.99		
No.of Otoliths Read		18	30	48	114	17	10	15	5	2	1	3	1			264

[1)]The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

SAMPLE DATA: No.Samples-1, No.Fish Measured-4900, Mean Length(cm)-65.11, Mean Weight(Kg)-2.78, Mean Age-6.6, Range of Depths(fm)-36-120.

(cont'd.)

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.)

AGE/LENGTH FREQUENCIES - COD[1)]

by V.I.Travin
E.M.Mankevich

OTTER TRAWLERS - Exploratory Catches

Location	1C											
Month	June											
Year-Class	>1957	1957	1956	1955	1954	1953	1952	1951	1950	<1950	Total	No. of Otoliths Read
Age	<3	3	4	5	6	7	8	9	10	>10		
3-cm group	FREQUENCIES in ‰											
30-32	1	-	-	-	-	-	-	-	-	-	1	
33-35	-	14	-	-	-	-	-	-	-	-	14	21
36-38	-	37	8	1	-	-	-	-	-	-	46	55
39-41	-	41	12	-	-	-	-	-	-	-	53	82
42-44	-	20	18	1	-	-	-	-	-	-	39	31
45-47	-	1	29	2	-	-	-	-	-	-	32	22
48-50	-	-	34	8	-	-	-	-	-	-	42	30
51-53	-	-	19	31	-	-	-	-	-	-	50	47
54-56	-	-	9	44	4	1	-	-	-	-	58	46
57-59	-	-	1	42	4	-	-	-	-	-	47	36
60-62	-	-	2	37	22	-	-	-	-	-	61	30
63-65	-	-	-	34	45	13	-	-	-	-	92	29
66-68	-	-	-	8	44	22	-	-	-	-	74	10
69-71	-	-	-	-	54	58	4	-	-	-	116	26
72-74	-	-	-	6	19	53	7	7	-	-	92	14
75-77	-	-	-	-	7	38	15	-	-	-	60	8
78-80	-	-	-	-	-	45	-	9	9	-	63	7
81-83	-	-	-	-	-	10	19	-	-	-	29	3
84-86	-	-	-	-	-	-	-	-	-	14	14	
87-89	-	-	-	-	-	-	-	-	-	6	6	
90-92	-	-	-	-	-	-	-	5	-	-	5	1
93-95	-	-	-	-	-	-	-	4	-	-	4	1
96-98	-	-	-	-	-	-	-	-	-	1	1	
99-101	-	-	-	-	-	-	-	-	-	1	1	
Total Number	1	113	132	214	199	240	45	25	9	22	1000	
Mean Length (cm)	31.00	38.89	47.08	58.18	67.00	73.09	77.50	82.18	79.00	87.43		
No. of Otoliths Read		146	113	136	53	40	6	4	1			499

1)The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	2
Number Fish Measured	3546
Mean Length (cm)	62.14
Mean Weight (Kg)	1.54
Mean Age	5.7
Range of Depths (fm)	33-109

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 (cont'd.) AGE/LENGTH FREQUENCIES - COD[1)]

by V.I.Travin
E.M.Mankevich

OTTER TRAWLERS - Exploratory Catches

Location	1D														
Month	April														
Year-Class	>1957	1957	1956	1955	1954	1953	1952	1951	1950	1949	1947	1945	<1945	Tot.	No. of
Age	<3	3	4	5	6	7	8	9	10	11	13	15	>15		Otoliths
3-cm group	FREQUENCIES in °/oo														Read
33-35	2	-	-	-	-	-	-	-	-	-	-	-	-	2	
36-38	-	3	7	-	-	-	-	-	-	-	-	-	-	10	7
39-41	-	3	18	-	-	-	-	-	-	-	-	-	-	21	25
42-44	-	3	51	-	-	-	-	-	-	-	-	-	-	54	55
45-47	-	-	94	4	-	-	-	-	-	-	-	-	-	98	82
48-50	-	1	105	13	-	-	-	-	-	-	-	-	-	119	109
51-53	-	-	75	14	3	-	-	-	-	-	-	-	-	92	59
54-56	-	-	22	30	2	-	-	-	-	-	-	-	-	54	29
57-59	-	-	6	17	10	2	-	-	-	-	-	-	-	35	18
60-62	-	-	-	24	26	6	-	-	-	-	-	-	-	56	26
63-65	-	-	2	11	31	31	2	-	-	-	-	-	-	77	33
66-68	-	-	-	2	42	44	2	-	-	-	-	-	-	90	41
69-71	-	-	-	-	13	56	11	-	3	3	-	-	-	86	32
72-74	-	-	-	-	5	65	10	5	-	-	-	-	-	85	33
75-77	-	-	-	-	4	42	5	2	-	-	-	-	-	53	24
78-80	-	-	-	-	-	13	9	6	3	4	-	2	-	37	12
81-83	-	-	-	-	2	6	4	-	5	-	-	-	-	17	8
84-86	-	-	-	-	-	4	2	-	-	-	-	-	-	6	3
87-89	-	-	-	-	-	-	-	-	-	-	4	-	-	4	1
90-92	-	-	-	-	-	-	-	-	-	-	-	-	2	2	
93-95	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
108-110	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
Total Number	2	10	380	115	138	269	45	13	11	7	4	2	4	1000	
Mean Length (cm)	32.59	40.93	47.98	56.50	65.11	71.11	74.47	76.24	77.86	74.74	88.00	79.00	97.63		
No. of Otoliths Read		10	317	66	62	111	18	5	4	2	1	1			597

1) The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	2
Number Fish Measured	6289
Mean Length (cm)	59.92
Mean Weight (Kg)	1.90
Mean Age	5.6
Range of Depths (fm)	33-205

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1)] by V.I.Travin E.M.Mankevich
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Location	1D														
Month	May														
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total	No. of
Age	3	4	5	6	7	8	9	10	11	12	13	14	15		Otoliths
3-cm group	FREQUENCIES in ‰														Read
33-35	3	-	-	-	-	-	-	-	-	-	-	-	-	3	2
36-38	12	-	-	-	-	-	-	-	-	-	-	-	-	12	10
39-41	21	5	-	-	-	-	-	-	-	-	-	-	-	26	34
42-44	10	39	-	-	-	-	-	-	-	-	-	-	-	49	28
45-47	7	84	-	-	-	-	-	-	-	-	-	-	-	91	39
48-50	-	118	4	-	-	-	-	-	-	-	-	-	-	122	54
51-53	-	67	13	3	-	-	-	-	-	-	-	-	-	83	25
54-56	18	18	8	2	-	-	-	-	-	-	-	-	-	46	18
57-59	-	3	10	15	2	-	-	-	-	-	-	-	-	30	18
60-62	-	-	26	16	10	-	-	-	-	-	-	-	-	52	26
63-65	-	4	12	33	19	3	-	-	-	-	-	-	-	71	49
66-68	-	-	-	32	36	2	-	-	-	-	-	-	-	70	59
69-71	-	-	5	30	55	8	1	-	-	-	-	-	-	99	85
72-74	-	-	-	23	50	9	2	1	-	-	-	-	-	85	72
75-77	-	-	-	9	39	8	2	-	-	-	-	-	-	58	75
78-80	-	-	1	3	25	14	4	3	1	1	-	-	-	52	56
81-83	-	-	-	-	7	8	2	5	2	-	-	-	-	24	21
84-86	-	-	-	-	5	5	2	1	-	1	-	-	1	15	13
87-89	-	-	-	-	1	-	2	-	-	-	2	1	-	6	8
90-92	-	-	-	-	-	1	-	2	-	-	1	-	-	4	5
93-95	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1
96-98	-	-	-	-	-	-	-	1	-	-	-	-	-	1	1
Total Number	71	338	79	166	249	58	15	14	3	2	3	1	1	1000	
Mean Length	48.61		66.64		76.33		84.34		82.30		88.00				
(cm)	44.14	59.02		71.86		79.18		81.13		88.69		85.00			
No. of Otoliths Read	55	149	41	130	228	55	16	14	3	2	4	1	1		699

1) The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	3
Number Fish Measured	14086
Mean Length (cm)	60.82
Mean Weight (Kg)	2.80
Mean Age	5.6
Range of Depths (fm)	22-113

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1)]

(cont'd.)

OTTER TRAWLERS - Exploratory Catches

by V.I.Travin
E.M.Mankevich

Location	1E														
Month	May														
Year-Class	>1956	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	<1946	Tot.	No. of Otoliths Read
Age	<4	4	5	6	7	8	9	10	11	12	13	14	>14		
3-cm group	FREQUENCIES in ‰														
30-32	1	-	-	-	-	-	-	-	-	-	-	-	-	1	
33-35	1	-	-	-	-	-	-	-	-	-	-	-	-	1	
36-38	-	5	-	-	-	-	-	-	-	-	-	-	-	5	1
39-41	-	21	-	-	-	-	-	-	-	-	-	-	-	21	8
42-44	-	51	-	-	-	-	-	-	-	-	-	-	-	51	17
45-47	-	64	-	3	-	-	-	-	-	-	-	-	-	67	24
48-50	-	39	4	-	-	-	-	-	-	-	-	-	-	43	9
51-53	-	4	8	1	-	-	-	-	-	-	-	-	-	13	
54-56	-	-	4	1	-	-	-	-	-	-	-	-	-	5	
57-59	-	-	-	5	1	-	-	-	-	-	-	-	-	6	
60-62	-	-	-	11	-	12	-	-	-	-	-	-	-	23	2
63-65	-	-	-	23	28	-	-	-	-	-	-	-	-	51	9
66-68	-	-	-	12	48	6	-	-	-	-	-	-	-	66	22
69-71	-	-	3	21	84	6	3	3	-	-	-	-	-	120	41
72-74	-	-	-	5	51	9	14	22	-	-	5	-	-	106	23
75-77	-	-	-	6	35	16	10	32	-	10	6	-	-	115	36
78-80	-	-	-	-	23	17	20	20	-	34	15	3	-	132	46
81-83	-	-	-	-	6	6	6	25	12	15	3	-	-	73	24
84-86	-	-	-	-	-	3	5	5	11	10	5	8	-	47	18
87-89	-	-	-	-	-	-	7	7	-	8	-	-	-	22	6
90-92	-	-	-	-	-	-	-	6	3	8	6	-	-	23	8
93-95	-	-	-	-	-	-	-	-	-	3	-	2	-	5	2
96-98	-	-	-	-	-	-	-	-	-	-	2	-	-	2	3
99-101	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1
102-104	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
Total Number	2	184	19	88	276	75	65	120	26	88	43	13	1	1000	
Mean Length (cm)	32.50	44.98	54.43	65.62	71.14	73.63	78.67	78.88	84.19	82.27	81.58	85.30	103.00		
No. of Otoliths Read		57	2	20	82	21	20	38	9	30	16	5			300

[1)] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	1
Number Fish Measured	2182
Mean Length (cm)	69.07
Mean Weight (Kg)	3.18
Mean Age	7.8
Range of Depths (fm)	44-208

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1] by V.I.Travin E.M.Mankevich
(cont'd.)

OTTER TRAWLERS - Exploratory Catches

Location	1F										
Month	April										
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	Total	No. of Otoliths Read
Age	3	4	5	6	7	8	9	10	11		
3-cm group	FREQUENCIES in ‰										
33-35	-	10	-	-	-	-	-	-	-	10	3
36-38	-	27	-	-	-	-	-	-	-	27	8
39-41	4	120	3	-	-	-	-	-	-	127	38
42-44	3	204	10	-	-	-	-	-	-	217	65
45-47	-	138	40	-	-	-	-	-	-	178	53
48-50	-	21	30	-	-	-	-	-	-	51	15
51-53	-	3	44	7	3	-	-	-	-	57	17
54-56	-	3	20	3	6	-	-	-	-	32	10
57-59	-	-	4	3	17	-	-	1	-	24	7
60-62	-	-	-	10	34	3	3	-	-	50	15
63-65	-	-	-	7	37	13	3	-	-	60	18
66-68	-	-	-	3	40	4	3	-	-	50	15
69-71	-	-	-	-	20	13	-	-	-	33	10
72-74	-	-	-	-	-	27	-	7	3	37	11
75-77	-	-	-	-	-	-	4	20	-	24	7
78-80	-	-	-	-	-	-	10	3	-	13	4
81-83	-	-	-	-	-	-	7	3	-	10	3
Total Number	7	526	151	33	157	60	30	33	3	1000	
Mean Length (cm)	41.50	43.00	49.48	59.50	63.61	69.34	74.35	76.30	73.00		
No. of Otoliths read	2	157	45	10	47	18	9	10	1		299

[1] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	1
Number Fish Measured	299
Mean Length (cm)	51.49
Mean weight (Kg)	1.40
Mean Age	5.3
Range of Depths (fm)	77-82

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1)] by V.I.Travin
(cont'd.)

OTTER TRAWLERS - Exploratory Catches

Location	2J																	
Month	May																	
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1942	Total	No. of Otoliths Read
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18		
3-cm group	FREQUENCIES in °/oo																	
24-26	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	2
27-29	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	1
30-32	3	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	4
33-35	-	7	4	2	2	-	-	-	-	-	-	-	-	-	-	-	15	8
36-38	-	6	10	4	-	-	-	-	-	-	-	-	-	-	-	-	20	19
39-41	-	3	11	8	3	1	-	-	-	-	-	-	-	-	-	-	26	23
42-44	-	5	7	22	20	4	-	1	-	-	-	-	-	-	-	-	59	41
45-47	-	-	2	18	35	21	7	2	-	-	-	-	-	-	-	-	85	37
48-50	-	-	7	11	41	45	19	15	7	4	-	-	-	-	-	-	149	40
51-53	-	-	3	10	23	26	40	25	20	5	5	-	-	-	-	-	157	62
54-56	-	-	-	-	19	22	38	41	29	16	-	-	3	-	-	-	168	53
57-59	-	-	-	2	2	11	14	23	34	14	7	9	7	-	-	-	123	54
60-62	-	-	-	3	2	3	8	3	3	16	8	15	8	3	-	-	72	27
63-65	-	-	-	-	-	1	5	3	7	5	12	14	6	3	-	-	56	42
66-68	-	-	-	-	-	1	-	-	1	1	4	7	5	3	2	2	26	23
69-71	-	-	-	-	-	-	-	-	-	1	-	1	3	2	1	-	8	8
72-74	-	-	-	-	-	-	-	-	-	-	-	-	2	2	2	-	6	3
75-77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78-80	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1
Total Number	12	38	44	80	147	135	131	113	101	62	36	46	34	14	5	2	1000	
Mean Length(cm)	26.50	41.77	48.61	53.77	55.93	60.82	62.77	70.00										
	34.09	45.85	51.09	54.28	57.76	62.44	67.21	67.00										
No.Otoliths Read	3	19	31	44	60	50	49	42	41	26	21	27	20	10	4	1		448

[1)] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA: No.Samples-14, No.Fish Measured-17241, Mean Length(cm)-52.18, Mean Weight(Kg)-1.35, Mean Age-9.12,
Range of Depths (fm) - 123-253

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS – 1960 AGE/LENGTH FREQUENCIES – COD[1] by V.I.Travin
(cont'd.)

OTTER TRAWLERS – Exploratory Catches

Location	2J																		
Month	June																		
Year-Class	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	1937	Total	No. of Otoliths Read
Age	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	23		
3-cm group	FREQUENCIES in ‰																		
21-23	–	11	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	11	3
24-26	–	32	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	32	14
27-29	2	32	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	40	26
30-32	–	28	11	–	2	–	–	–	–	–	–	–	–	–	–	–	–	41	23
33-35	2	4	21	11	2	–	–	–	–	–	–	–	–	–	–	–	–	40	22
36-38	–	–	29	3	3	3	–	–	–	–	–	–	–	–	–	–	–	38	12
39-41	–	1	9	16	7	2	–	–	–	–	–	–	–	–	–	–	–	35	20
42-44	–	–	8	6	20	3	8	–	–	3	–	–	–	–	–	–	–	48	17
45-47	–	–	–	9	38	14	6	3	–	–	–	–	–	–	–	–	–	70	24
48-50	–	–	–	16	27	51	12	–	3	–	–	–	–	–	–	–	–	109	28
51-53	–	–	–	12	22	19	41	12	–	7	7	3	–	–	–	–	–	123	38
54-56	–	–	–	–	6	26	32	19	9	21	12	6	3	–	–	–	–	134	48
57-59	–	–	–	4	4	4	36	15	5	14	9	–	5	–	5	–	–	101	21
60-62	–	–	–	–	–	5	14	14	5	5	5	10	10	5	–	–	–	73	15
63-65	–	–	–	–	–	–	7	12	12	3	3	10	3	6	3	–	–	59	19
66-68	–	–	–	–	–	–	–	3	–	3	7	3	10	–	–	4	–	30	9
69-71	–	–	–	–	–	–	–	–	3	3	3	3	–	–	–	–	–	12	4
72-74	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
75-77	–	–	–	–	–	–	–	–	–	–	–	–	3	–	–	–	–	3	2
78-80	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1
Total Number	4	108	84	77	131	127	156	78	37	59	46	35	34	11	8	4	1	1000	
Mean Length (cm)	27.61		44.64		50.53		57.70		57.08		61.34		62.63		67.00				
	31.00		35.71		47.01		54.43		59.86		59.17		63.38		60.25		79.00		
No. of Otoliths Read	2	57	39	30	44	38	45	22	11	18	13	10	10	3	2	1	1		346

[1] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA: No.Samples–26, No.Fish Measured–5910, Mean Length(cm)–49.23, Mean Weight(Kg)–1.50, Mean Age–7.56,
Range of Depths (fm) – 97–266

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1] by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Location	2J													
Month	November													
Year-Class	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	Total	No. of Otoliths Read
Age	4	5	6	7	8	9	10	11	12	13	14	15		
3-cm group	FREQUENCIES in ‰													
42-44	33	19	6	-	-	-	-	-	-	-	-	-	58	9
45-47	33	13	7	-	-	-	-	-	-	-	-	-	53	8
48-50	4	35	34	5	5	-	-	-	-	-	-	-	83	17
51-53	-	61	28	28	6	-	5	-	-	-	-	-	128	23
54-56	-	16	45	42	22	16	3	-	-	-	-	-	144	45
57-59	-	10	10	19	34	41	17	14	7	-	-	-	152	63
60-62	-	3	6	33	30	24	15	33	9	3	3	-	159	53
63-65	-		2	12	24	19	12	24	12	5	11	-	121	50
66-68	-		-	10	12	5	10	8	2	-	2	-	49	20
69-71	-		-	-	6	7	-	7	-	12	-	-	32	5
72-74	-		-	-	-	-	-	4	9	-	-	4	17	4
75-77	-		-	-	-	-	2	-	2	-	-	-	4	2
Total Number	70	157	138	149	139	112	64	90	41	20	16	4	1000	
Mean Length (cm)	44.77	50.62	52.54	57.49	59.92	50.37	61.78	63.70	65.02	67.15	63.82	73.00		
No. of Otoliths Read	11	33	35	47	49	41	24	32	15	5	6	1		299

[1] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	77
Number Fish Measured	4972
Mean Length (cm)	56.89
Mean Weight (Kg)	2.04
Mean Age	7.72
Range of Depths (fm)	77-296

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1)] by V.I.Travin
(cont'd.)

OTTER TRAWLERS - Exploratory Catches

Location	2J															
Month	December															
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	Total	No. of Otoliths Read
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
3-cm group	FREQUENCIES in °/oo															
36-38	-	8	6	-	-	-	-	-	-	-	-	-	-	-	14	5
39-41	5	17	1	-	-	-	-	-	-	-	-	-	-	-	23	14
42-44	5	30	17	1	1	-	-	-	-	-	-	-	-	-	54	33
45-47	-	17	25	1	-	-	-	-	-	-	-	-	-	-	43	23
48-50	-	3	47	11	3	2	-	-	-	-	-	-	-	-	66	23
51-53	-	-	38	43	15	9	-	-	-	-	-	-	-	-	105	36
54-56	-	-	36	47	28	14	2	4	4	-	-	-	-	-	135	40
57-59	-	-	-	28	16	36	23	12	4	-	-	8	-	-	127	33
60-62	-	-	10	25	10	35	29	34	19	5	-	-	-	-	167	34
63-65	-	-	3	-	12	27	17	23	8	12	8	8	8	-	126	31
66-68	-	-	-	4	12	-	-	12	16	8	4	4	-	-	60	17
69-71	-	-	-	-	-	12	-	18	-	12	-	-	-	6	48	5
72-74	-	-	-	-	-	-	-	-	-	22	-	-	-	-	22	1
75-77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78-80	-	-	-	-	-	-	-	-	-	10	-	-	-	-	10	1
Total Number	10	75	183	160	97	135	71	103	51	69	12	20	8	6	1000	
Mean Length (cm)	41.50	42.61	50.29	55.42	57.94	60.20	60.58	63.36	62.65	70.22	65.0	62.20	64.00	70.00		
No. of Otoliths Read	6	41	68	47	27	33	18	23	12	10	3	5	2	1		296

1)The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	31
Number Fish Measured	1934
Mean Length (cm)	57.25
Mean Weight (Kg)	1.68
Mean Age	7.67
Range of Depths (fm)	134-225

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1] by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Location	3K														
Month	February														
Year-Class	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1945	Total	No. of
Age	2	3	4	5	6	7	8	9	10	11	12	13	15		Otoliths
3-cm group	FREQUENCIES in ‰														Read
21-23	1	-	-	-	-	-	-	-	-	-	-	-	-	1	1
24-26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-29	-	6	-	-	-	-	-	-	-	-	-	-	-	6	1
30-32	-	4	6	-	-	-	-	-	-	-	-	-	-	10	8
33-35	-	2	7	-	-	-	-	-	-	-	-	-	-	9	7
36-38	-	13	12	-	-	-	-	-	-	-	-	-	-	25	2
39-41	-	-	11	12	5	-	-	-	-	-	-	-	-	28	7
42-44	-	-	11	73	5	-	-	-	-	-	-	-	-	89	17
45-47	-	-	19	35	16	-	-	-	-	-	-	-	-	70	18
48-50	-	-	4	54	21	21	-	-	-	-	-	-	-	100	24
51-53	-	-	-	50	33	37	-	4	-	-	-	-	-	124	30
54-56	-	-	-	39	39	20	7	-	-	-	-	-	-	105	16
57-59	-	-	-	6	12	18	49	12	6	-	-	-	-	103	17
60-62	-	-	-	-	4	13	37	4	8	-	-	-	-	66	16
63-65	-	-	-	-	8	16	24	8	-	-	9	24	-	89	11
66-68	-	-	-	-	-	-	23	-	24	-	-	-	-	47	6
69-71	-	-	-	-	-	-	-	-	-	-	-	23	-	23	1
72-74	-	-	-	-	-	-	-	-	-	-	-	38	-	38	2
75-77	-	-	-	-	-	-	-	-	-	9	9	-	-	18	5
78-80	-	-	-	-	-	-	-	-	-	7	14	-	-	21	3
81-83	-	-	-	-	-	-	-	-	-	-	-	17	-	17	1
84-86	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87-89	-	-	-	-	-	-	-	-	-	-	-	-	6	6	1
90-92	-	-	-	-	-	-	-	-	-	-	-	3	-	3	1
93-95	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96-98	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
105-107	-	-	-	-	-	-	-	-	-	-	-	1	-	1	1
Total Number	1	25	70	269	143	125	140	28	38	16	32	107	6	1000	
Mean Length (cm)	22.00	33.64	40.72	48.22	52.39	55.31	61.15	59.29	64.30	77.32	73.93	72.79	88.00		
No. of Otoliths Read	1	7	20	56	27	23	22	5	8	1	5	11	11		197

[1] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	16
Number Fish Measured	1593
Mean Length (cm)	55.66
Mean Weight (Kg)	1.64
Mean Age	7.22
Range of Depths (fm)	151-192

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1] by V.I.Travin
(cont'd.)

OTTER TRAWLERS - Exploratory Catches

Location	3K																
Month	June																
Year-Class	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total	No. of Otoliths Read
Age	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
3-cm group	FREQUENCIES in ‰																
24-26	8	8	-	-	-	-	-	-	-	-	-	-	-	-	-	16	2
27-29	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	1
30-32	6	15	-	-	-	-	-	-	-	-	-	-	-	-	-	21	7
33-35	3	24	-	-	-	-	-	-	-	-	-	-	-	-	-	27	8
36-38	-	34	8	6	-	-	-	-	-	-	-	-	-	-	-	48	17
39-41	-	16	20	6	2	-	-	-	-	-	-	-	-	-	-	44	26
42-44	-	22	15	16	6	-	-	-	-	-	-	-	-	-	-	59	24
45-47	-	2	34	27	6	-	2	-	-	-	-	-	-	-	-	71	34
48-50	-	-	27	44	12	15	-	-	-	-	-	-	-	-	-	98	40
51-53	-	-	11	23	32	23	-	-	2	-	-	-	-	-	-	91	32
54-56	-	-	2	18	28	28	15	10	20	2	-	-	-	-	-	123	61
57-59	-	-	2	6	17	15	27	20	15	6	-	5	-	-	-	113	52
60-62	-	-	-	-	16	11	18	22	11	21	6	6	-	-	-	111	41
63-65	-	-	-	-	-	2	10	10	13	17	15	-	2	6	2	77	31
66-68	-	-	-	-	9	6	9	-	-	-	9	4	4	-	-	41	9
69-71	-	-	-	-	-	-	-	-	2	6	3	6	4	3	-	24	8
72-74	-	-	-	-	-	-	-	2	-	2	2	-	-	3	-	9	4
75-77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
78-80	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	4	1
Total Number	40	121	119	146	128	100	81	64	63	54	35	25	10	12	2	1000	
Mean Length (cm)	28.30	36.79	45.68	48.52	54.46	55.42	59.56	59.98	58.99	62.83	65.29	66.40	67.60	67.75	64.00		
No. of Otoliths Read	5	45	54	63	52	41	34	27	28	22	12	7	3	4	1		398

[1] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA: No.Samples-7, No.Fish Measured-1582, Mean Length(cm) 51.91, Mean Weight (Kg)-1.68, Mean Age-7.66,
Range of Depths (fm) 90-217.

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1] by V.I.Travin
(cont'd.)

OTTER TRAWLERS - Exploratory Catches

Location	3M														
Month	March														
Year-Class	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946	1945	1944	1943	Total	No. of Otoliths Read
Age	5	6	7	8	9	10	11	12	13	14	15	16	17		
3-cm group	FREQUENCIES in ‰														
39-41	-	17	-	-	-	-	-	-	-	-	-	-	-	17	1
42-44	11	5	5	-	-	-	-	-	-	-	-	-	-	21	4
45-47	3	28	10	-	-	-	-	-	-	-	-	-	-	41	12
48-50	9	85	26	-	-	-	-	-	-	-	-	-	-	120	42
51-53	-	155	52	3	3	3	3	-	-	-	-	-	-	219	76
54-56	6	114	52	3	6	3	-	-	-	-	-	-	-	184	64
57-59	-	38	53	6	12	10	8	3	-	-	-	-	-	130	52
60-62	-	17	28	3	5	8	30	3	3	-	-	-	-	97	35
63-65	-	3	11	-	3	7	23	2	3	-	2	-	-	54	31
66-68	-	2	3	3	3	3	15	2	3	3	-	-	-	37	23
69-71	-	-	2	-	6	1	12	-	2	3	-	-	-	26	17
72-74	-	-	-	-	-	2	6	4	5	-	-	-	-	17	8
75-77	-	-	-	-	-	2	4	-	-	2	-	-	-	8	4
78-80	-	-	-	-	2	1	1	2	-	2	-	-	-	8	5
81-83	-	-	-	-	-	-	-	2	-	2	-	-	-	4	2
84-86	-	-	-	-	-	-	1	1	1	1	1	-	-	5	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93-95	-	-	-	-	-	-	1	-	1	-	-	-	-	2	2
96-98	-	-	-	-	-	-	-	-	-	3	-	-	-	3	1
99-101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102-104	-	-	-	-	-	-	-	-	-	1	-	-	-	1	2
105-107	-	-	-	-	-	-	-	-	-	-	-	1	1	2	2
108-110	-	-	-	-	-	-	-	-	-	1	1	-	-	2	2
111-113	-	-	-	-	-	-	1	-	-	-	-	-	-	1	2
Total Number	29	464	242	18	40	40	105	19	18	18	4	1	1	999	
Mean Length (cm)	47.65	52.24	55.12	58.49	61.45	62.12	65.51	69.37	70.00	81.82	80.50	106.00	106.00		
No. of Otoliths Read	8	161	86	7	19	19	54	9	10	12	3	3	2		393

[1] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	20
Number Fish Measured	1721
Mean Length (cm)	56.47
Mean Weight (Kg)	2.54
Mean Age	7.51
Range of Depths (fm)	125-236

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES -- COD[1] by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Location	3M													
Month	July													
Year-Class	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	Total	No. of Otoliths Read
Age	2	3	4	5	6	7	8	9	10	11	12	13		
3-cm group	FREQUENCIES in ‰													
22-23	2	-	-	-	-	-	-	-	-	-	-	-	2	1
24-26	14	1	-	-	-	-	-	-	-	-	-	-	15	17
27-29	16	3	-	-	-	-	-	-	-	-	-	-	19	26
30-32	3	15	1	-	-	-	-	-	-	-	-	-	19	20
33-35	-	26	2	-	-	-	-	-	-	-	-	-	28	15
36-38	-	42	3	-	-	-	-	-	-	-	-	-	45	25
39-41	-	10	20	3	-	-	-	-	-	-	-	-	33	10
42-44	-	6	24	-	-	-	-	-	-	-	-	-	30	5
45-47	-	-	23	3	19	6	3	-	-	-	-	-	54	17
48-50	-	-	12	15	44	18	-	-	-	-	-	-	89	30
51-53	-	-	-	7	78	37	3	-	3	-	-	-	128	38
54-56	-	-	-	9	92	79	-	5	-	9	-	-	194	42
57-59	-	-	-	-	50	70	10	-	10	10	-	-	150	15
60-62	-	-	-	-	36	21	8	14	8	-	8	-	95	13
63-65	-	-	-	-	21	-	-	-	-	43	-	-	64	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72-74	-	-	-	-	-	-	4	-	-	-	-	-	4	1
75-77	-	-	-	-	-	-	-	-	-	-	-	5	5	1
Total Number	35	103	85	37	340	231	28	19	21	69	27	5	1000	
Mean Length (cm)	26.74	35.62	43.39	50.05	54.78	55.27	59.07	59.42	58.28	62.26	65.22	76.00		
No. of Otoliths Read	42	62	25	11	75	46	4	3	4	6	4	1		283

[1] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	41
Number Fish Measured	1648
Mean Length (cm)	51.94
Mean Weight (Kg)	1.50
Mean Age	6.31
Range of Depths (fm)	94-283

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1] by V.I.Travin
(cont'd.)

OTTER TRAWLERS - Exploratory Catches

Location	3N																
Month	July																
Year-Class	1958	1957	1956	1955	1954	1953	1952	1951	1950	1949	1947	1946	1945	1944	1942	Total	No. of Otoliths Read
Age	2	3	4	5	6	7	8	9	10	11	13	14	15	16	18		
3-cm group	FREQUENCIES in °/oo																
18-20	129	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129	2
21-23	141	120	-	-	-	-	-	-	-	-	-	-	-	-	-	261	13
24-26	59	92	-	-	-	-	-	-	-	-	-	-	-	-	-	151	25
27-29	12	47	-	-	-	-	-	-	-	-	-	-	-	-	-	59	19
30-32	2	9	-	-	-	-	-	-	-	-	-	-	-	-	-	11	4
33-35	-	5	2	-	-	-	-	-	-	-	-	-	-	-	-	7	4
36-38	-	5	10	-	-	-	-	-	-	-	-	-	-	-	-	15	5
39-41	-	9	14	-	-	-	-	-	-	-	-	-	-	-	-	23	8
42-44	-	-	7	2	-	-	-	-	-	-	-	-	-	-	-	9	4
45-47	-	-	12	9	-	-	-	-	-	-	-	-	-	-	-	21	8
48-50	-	-	5	14	-	-	-	-	-	-	-	-	-	-	-	19	5
51-53	-	-	-	26	-	-	-	-	-	-	-	-	-	-	-	26	7
54-56	-	-	-	19	7	-	-	-	-	-	-	-	-	-	-	26	8
57-59	-	-	2	5	10	2	-	-	-	-	-	-	-	-	-	19	7
60-62	-	-	-	12	5	2	-	-	-	2	-	-	-	-	-	21	9
63-65	-	-	-	5	14	5	7	-	-	-	-	-	-	-	-	31	11
66-68	-	-	-	-	-	7	7	-	-	-	-	-	-	-	-	14	7
69-71	-	-	-	-	2	12	7	-	-	-	2	-	-	-	-	23	10
72-74	-	-	-	-	2	12	9	-	-	2	-	-	-	-	-	25	8
75-77	-	-	-	-	-	5	10	5	-	-	-	-	-	-	-	20	5
78-80	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	4	2
81-83	-	-	-	-	-	-	2	-	2	7	-	-	-	-	-	11	4
>83[2]	-	-	-	-	-	-	5	-	5	22	10	9	5	7	12	75	13
Total Number	343	287	52	92	40	47	47	7	7	33	12	9	5	7	12	1000	
Mean Length (cm)	25.27		53.53		68.70		76.86		86.36		101.33		91.00				
	21.64	42.55		61.30		72.94		86.28		92.50		115.00		109.00			
No.Otoliths Read	23	46	18	31	15	18	17	2	2	7	4	2	1	1	1		188

[1] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

[2] 1952: 87-89(5); 1950: 87-89(5); 1949: 87-89(5), 90-92(10), 93-95(7); 1947(87-89(5); 105-107(5); 1946: 99-101(7); 105-107(2); 1945: 114-116(5); 1944: 90-92(7); 1942: 108-110(112).

(cont'd.)

SAMPLE DATA: No.Samples-4, No.Fish Measured-425, Mean Length(cm)-39.51, Mean Weight(Kg)——, Mean Age-4.33, Range of Depths (fm)-111-198

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1] by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Location	3N									
Month	September									
Year-Class	1956	1955	1954	1953	1952	1951	1948	1946	Total	No. of Otoliths Read
Age	4	5	6	7	8	9	12	14		
3-cm group	FREQUENCIES in ‰									
42-44	19	11	-	-	-	-	-	-	30	3
45-47	34	19	-	-	-	-	-	-	53	16
48-50	49	101	7	-	-	-	-	-	157	47
51-53	22	133	7	2	-	-	-	-	164	53
54-56	6	218	17	4	-	-	-	-	245	74
57-59	-	137	30	-	-	-	-	-	167	52
60-62	-	60	38	4	4	-	-	-	106	32
63-65	-	23	11	-	-	-	-	-	34	10
66-68	-	11	7	-	4	-	-	-	22	6
69-71	-	-	-	-	-	-	-	-	-	-
72-74	-	-	-	7	-	-	4	-	11	2
75-77	-	-	-	4	-	-	-	-	4	1
-	-	-	-	-	-	-	-	-	-	-
84-86	-	-	-	-	3	-	-	-	3	1
-	-	-	-	-	-	-	-	-	-	-
93-95	-	-	-	-	-	2	-	-	2	1
-	-	-	-	-	-	-	-	2	2	1
Total Number	130	713	117	21	11	2	4	2	1000	
Mean Length (cm)	48.13	54.73	58.75	65.86	69.72	94.00	73.00	103.00		
No.Otoliths Read	36	217	35	5	3	1	1	1		299

[1]The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	10
Number Fish Measured	467
Mean Length (cm)	54.98
Mean Weight (Kg)	1.66
Mean Age	5.12
Range of Depths (fm)	22-31

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1] by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Location	3P										
Month	January										
Year-Class	1956	1955	1954	1953	1952	1951	1950	1947	1945	Total	No. of Otoliths Read
Age	4	5	6	7	8	9	10	13	15		
3-cm group	FREQUENCIES in °/oo										
39-41	22	23	-	-	-	-	-	-	-	45	2
42-44	56	70	-	-	-	-	-	-	-	126	9
45-47	14	140	7	-	-	-	-	-	-	161	24
48-50	10	156	-	-	-	-	-	-	-	166	54
51-53	2	160	17	3	-	-	-	-	-	182	66
54-56	2	89	27	3	6	-	-	-	-	127	47
57-59	-	23	21	2	2	-	-	-	-	48	23
60-62	-	11	21	4	2	-	-	-	-	38	18
63-65	-	-	6	8	11	2	-	-	-	27	13
66-68	-	-	3	-	12	2	-	-	-	17	10
69-71	-	-	-	8	10	5	-	-	-	23	14
72-74	-	-	-	6	4	2	2	-	2	16	8
75-77	-	-	-	3	-	-	5	-	-	8	3
78-80	-	-	-	-	4	-	4	-	-	8	2
81-83	-	-	-	-	-	-	5	-	-	5	1
84-86	-	-	-	-	-	1	-	2	-	3	3
Total Number	106	672	102	37	51	12	16	2	2	1000	
Mean Length (cm)	43.75	49.45	56.71	65.44	66.49	70.09	78.01	85.00	73.00		
No.Otoliths Read	12	185	42	18	25	7	5	2	1		297

[1]The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

(cont'd.)

SAMPLE DATA

Number of Samples	8
Number Fish Measured	2335
Mean Length (cm)	51.85
Mean Weight (Kg)	1.49
Mean Age	5.38
Range of Depths (fm)	84-159

TABLE 38 UNION OF SOVIET SOCIALIST REPUBLICS - 1960 AGE/LENGTH FREQUENCIES - COD[1] by V.I.Travin
(cont'd.)
OTTER TRAWLERS - Exploratory Catches

Location	3P									
Month	February									
Year-Class	1958	1957	1956	1955	1954	1953	1952	1951	Total	No. of Otoliths Read
Age	2	3	4	5	6	7	8	9		
3-cm group	FREQUENCIES in ‰									
18-20	-	2	-	-	-	-	-	-	2	1
21-23	-	2	-	-	-	-	-	-	2	1
24-26	4	-	-	-	-	-	-	-	4	1
27-29	-	11	-	-	-	-	-	-	11	6
30-32	-	38	2	-	-	-	-	-	40	19
33-35	-	43	9	5	-	-	-	-	57	24
36-38	-	7	51	4	-	-	-	-	62	19
39-41	-	4	103	22	-	-	-	-	129	41
42-44	-	-	80	69	-	-	-	-	149	39
45-47	-	-	47	142	-	-	-	-	189	55
48-50	-	-	17	124	4	-	-	-	145	36
51-53	-	-	-	69	7	-	-	-	76	23
54-56	-	-	-	49	18	4	-	-	71	16
57-59	-	-	-	17	9	-	-	-	26	3
60-62	-	-	-	5	-	4	-	-	9	3
-	-	-	-	-	-	-	-	-	-	-
69-71	-	-	-	-	-	4	-	5	9	2
72-74	-	-	-	-	-	4	4	2	10	3
75-77	-	-	-	-	-	-	-	-	-	-
78-80	-	-	-	-	-	-	9	-	9	2
Total Number	4	107	309	506	38	16	13	7	1000	
Mean Length (cm)	25.00	32.24	41.44	48.13	54.52	64.75	77.15	70.15		
No.Otoliths Read	1	47	93	136	8	4	3	2		294

[1] The length frequencies of these samples are given in Table 19; the age frequencies are given in Table 30.

SAMPLE DATA

Number of Samples	9
Number Fish Measured	550
Mean Length (cm)	45.31
Mean Weight (Kg)	0.87
Mean Age	4.61
Range of Depths (fm)	57-185

TABLE 39 PORTUGAL - 1960 WEIGHT TABLE - COD

by Mario J. Ruivo
Glicinia V. Quartin

Data on weights, in grams of whole fish, the liver, the gonads, and the intestines, stratified by size classes

Labrador

Sex	♂♂					♀♀				
cm group	Number Sampled	Total Weight	Wt. of Livers	Wt. of Gonads	Wt. of Intestines	Number Sampled	Total Weight	Wt. of Livers	Wt. of Gonads	Wt. of Intestines
37	1	570	40	>10	80	–	–	–	–	–
40	5	513	51	>10	131	3	575	25	>10	85
43	10	529	42	>11	91	8	840	57	>11	261
46	34	931	60	>11	86	30	965	97	>42	119
49	38	1197	85	>17	151	38	1128	74	>17	128
52	47	1347	80	28	155	43	1326	111	>19	150
55	49	1530	101	40	168	59	1583	95	>31	179
58	41	1850	121	51	210	59	1849	124	42	193
61	24	2150	135	73	248	59	2204	232	49	267
64	27	2447	132	65	254	35	2542	187	69	300
67	19	2866	153	160	235	22	2935	172	106	289
70	6	3295	227	163	332	20	3268	183	58	364
73	1	3790	210	80	520	6	3703	213	72	460
76	3	4023	168	203	208	–	–	–	–	–
79	1	4300	90	340	280	1	4520	250	100	560
–	–	–	–	–	–	–	–	–	–	–
88	–	–	–	–	–	1	6800	330	1450	560
–	–	–	–	–	–	–	–	–	–	–
103						1	12500	700	2550	660

HADDOCK

Guide to Tables

The numbers in the guide are page numbers. For a length frequency reference, the page number alone is given. For an age/length key or frequency the page number is followed by K.

PAGE NUMBERS

Division	OTTER TRAWL				OTHER GEARS			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
1E			204,211A' 212K					
3M	202	202		202				
3O	202,203	203		203				
3P south	203							
4S			199					
4W		200		199			201	[illegible]
4X	199,200	199,200	200	200				
5Y	205	199,205	199,205	199,205	201,205	201,205	205	[illegible]
5Z	206	199,206	206	206	206	206	206	[illegible]
6A					208,213K	208,213K	208,209 213K,214K	[illegible]

TABLE 40 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - HADDOCK

by W.R.Martin
D.N.Fitzgerald

Commercial Landings

Vessel Type	Otter Trawlers									
Vessel Tonnage Class	0-25		26-50		51-150					
Division	4X		4T	4X	4T	4V	4W		4X	5Y
Month	June	Dec.	Sept.	Dec.	July	Dec.	Feb.	April	Sept.	June
2-cm group	FREQUENCIES in ‰									
26-27	-	3	-	-	-	-	-	-	-	-
28-29	-	5	-	-	-	-	-	-	-	-
30-31	-	4	-	-	-	-	-	-	10	-
32-33	2	15	-	-	3	-	-	-	15	6
34-35	5	59	-	2	35	5	-	-	25	6
36-37	14	120	-	7	65	15	-	16	34	-
38-39	35	124	-	20	64	31	3	41	20	45
40-41	58	114	4	45	115	87	68	139	59	95
42-43	89	76	12	78	115	74	161	204	94	135
44-45	102	65	16	72	115	71	172	147	123	140
46-47	102	65	36	75	103	89	155	122	89	123
48-49	101	71	36	98	93	75	82	126	128	124
50-51	86	64	55	110	92	75	37	41	137	90
52-53	68	46	75	88	55	85	83	31	49	50
54-55	72	51	48	93	42	85	70	37	99	73
56-57	59	35	99	82	39	80	62	24	54	51
58-59	60	24	99	95	13	69	62	24	39	34
60-61	49	21	83	52	20	58	27	13	20	11
62-63	36	16	91	28	8	33	10	11	-	6
64-65	24	10	83	25	3	42	7	11	-	11
66-67	16	9	59	17	13	13	1	7	5	-
68-69	12	2	44	8	5	4	-	4	-	-
70-71	4	1	56	3	-	5	-	2	-	-
72-73	3	-	36	2	-	2	-	-	-	-
74-75	2	-	24	-	-	2	-	-	-	-
76-77	-	-	20	-	2	-	-	-	-	-
78-79	1	-	12	-	-	-	-	-	-	-
80-81	-	-	-	-	-	-	-	-	-	-
82-83	-	-	4	-	-	-	-	-	-	-
84-85	-	-	4	-	-	-	-	-	-	-
86-87	-	-	-	-	-	-	-	-	-	-
88-89	-	-	4	-	-	-	-	-	-	-
Total ‰	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers										
Number of Samples	5	6	1	2	3	2	3	1	1	1
Number Fish Measured	1800	1850	252	600	600	550	600	200	203	178
Mean Length (cm)	50.45	44.76	60.25	51.65	46.10	51.02	48.50	46.33	47.64	47.50
Mean Weight (Kg)	1.41	1.01	2.63	1.46	1.36	1.71	1.23	1.07	1.12	1.22
Total Wt.Landed(Tons)										
Estimated No. Landed										
Mesh Size (inches) 1)	4½?	4¼n	4⅜n	4⅝n	4n	4n	4½n	4½m	4½n	3¾n
Range of Depths (fm)	...	...	14	...	24-60	...	...	...	65-75	60-80

1) n = nylon; m = manila.

(cont'd.)

TABLE 40 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - HADDOCK by W.R.Martin
(cont'd.) D.N.Fitzgerald

Commercial Landings

Vessel Type	Otter Trawlers									
Vessel Tonnage Class	151-500									
Division	4V		4W							
Month	May	June	Feb.	March	March	May	June	July	Aug.	Nov.
2-cm group	FREQUENCIES in °/oo									
36-37	-	-	5	2	-	5	-	-	-	-
38-39	-	11	20	3	-	37	15	6	-	-
40-41	46	91	48	42	-	52	10	6	15	11
42-43	170	160	68	52	46	216	118	183	154	57
44-45	186	217	112	88	97	204	160	309	288	135
46-47	189	168	65	135	125	111	191	200	174	272
48-49	104	154	57	123	152	84	143	112	125	196
50-51	104	74	90	110	126	83	134	39	40	95
52-53	52	34	93	98	100	40	70	46	56	90
54-55	36	37	118	53	92	71	51	40	36	47
56-57	40	6	125	92	60	45	32	13	36	33
58-59	12	9	78	55	61	22	42	13	31	34
60-61	24	12	41	65	52	4	13	10	5	9
62-63	11	12	18	32	26	13	13	10	25	13
64-65	6	6	30	20	22	9	4	10	5	4
66-67	10	3	17	15	20	-	4	3	5	4
68-69	3	3	13	10	10	4	-	-	5	-
70-71	3	3	2	5	5	-	-	-	-	-
72-73	2	-	-	-	5	-	-	-	-	-
74-75	-	-	-	-	1	-	-	-	-	-
76-77	-	-	-	-	-	-	-	-	-	-
78-79	2	-	-	-	-	-	-	-	-	-
Total °/oo	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Serial Numbers										
Number of Samples	1	1	3	2	4	1	1	1	1	1
Number Fish Measured	200	200	600	400	800	200	200	200	200	200
Mean Length (cm)	47.98	46.69	51.74	51.52	51.99	47.12	48.57	46.88	47.75	48.85
Mean Weight (Kg)	1.10	1.04	1.52	1.43	1.22	1.21	1.15	1.21	1.11	1.32
Total Wt.Landed(Tons)										
Estimated No. Landed										
Mesh Size (inches)[1]	4½t	4½m	4½n	4½n	4½m	4½m	4⅞n	4½n	4⅝n	4⅞n
Range of Depths (fm)	...	20-31	48-100	42-64	48-70	30-32	28-35	18-26	18-24	26-33

[1] t = terylene; m = manila; n = nylon

(cont'd.)

TABLE 40 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - HADDOCK by W.R.Martin
(cont'd.) D.N.Fitzgerald

Commercial Landings

Vessel Type	Longliners					
Vessel Tonnage Class	0-25			26-50		
Division	4W		4X			
Month	July	November	January	April	May	June
2-cm Group	FREQUENCIES in °/oo					
32-33	-	-	-	-	3	-
34-35	-	-	-	-	-	-
36-37	-	-	-	-	-	8
38-39	1	5	4	-	3	8
40-41	32	18	8	-	8	12
42-43	51	18	13	10	18	32
44-45	60	80	33	14	19	38
46-47	100	88	52	23	22	40
48-49	78	80	49	23	56	92
50-51	136	110	105	54	84	148
52-53	103	92	149	82	134	135
54-55	103	100	100	94	98	110
56-57	79	92	100	127	103	100
58-59	66	92	105	146	106	100
60-61	52	62	100	108	109	60
62-63	40	42	92	103	97	75
64-65	45	48	38	85	48	30
66-67	19	28	19	33	37	8
68-69	15	15	16	47	19	-
70-71	7	12	14	33	18	2
72-73	4	8	3	9	8	2
74-75	5	-	-	9	6	-
76-77	4	8	-	-	2	-
78-79	-	-	-	-	2	-
80-81	-	2	-	-	-	-
Total °/oo	1000	1000	1000	1000	1000	1000
Serial Numbers						
Number of Samples	4	2	1	1	3	1
Number Fish Measured	750	400	400	230	600	400
Mean Length (cm)	53.10	54.29	53.21	58.64	56.65	53.60
Mean Weight (Kg)	1.71	1.94	1.93	2.41	1.99	1.82
Total Wt.Landed(Tons)						
Estimated No. Landed						
Hook Size	#6/0	#6/0	#6/0	#6/0	#6/0	#6/0
Range of Depths (fm)	18-34	30-40	40-50	...	85	40-60

TABLE 41 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - HADDOCK

by A.M.Fleming
M. O'Hanlon

Commercial Landings

Vessel Type	Otter Trawlers					
Vessel Tonnage Class	151-500					
Division	3N				3O	
Month	Jan.	Feb.	April	Nov.	Jan.	Feb.
2-cm group	FREQUENCIES in °/oo					
22-23	-	-	-	1	-	-
24-25	-	-	-	-	-	-
26-27	-	-	-	-	-	-
28-29	7	-	-	-	1	-
30-31	63	-	-	-	4	-
32-33	129	16	14	11	37	10
34-35	245	63	92	65	121	60
36-37	200	144	257	180	199	165
38-39	101	139	196	218	154	164
40-41	71	131	156	216	140	160
42-43	59	136	117	137	103	154
44-45	46	162	67	58	83	111
46-47	33	97	28	51	74	83
48-49	21	58	39	22	35	44
50-51	13	31	20	23	27	20
52-53	6	16	6	14	12	17
54-55	4	5	3	5	8	7
56-57	3	3	6	1	3	3
58-59	1	-	-	1	-	1
60-61	-	-	-	-	-	1
62-63	-	-	-	-	-	1
64-65	-	-	-	-	1	-
Total °/oo	1002	1001	1001	1003	1002	1001
Serial Numbers						
Number of Samples	7	1	1	3	4	8
Number Fish Measured	2379	382	358	878	1207	2531
Mean Length (cm)	37.28	41.72	39.79	40.31	40.17	41.26
Mean Weight (Kg)	0.48	0.67	0.60	0.65	0.61	0.66
Total Wt.Landed(Tons)	342	50	158	162	391	3609
Estimated No. Landed	713,362	75,221	262,616	246,562	640,945	5,478,386
Mesh Size[1]	m&n	n	n	m	m&n	n&d
	(mesh sizes vary from 3 7/8" to 4 3/4")					
Range of Depths (fm)	40-70	55-80	40-46	38-60	37-90	44-100

[1] m = manila; n = nylon; d = drilene.

(cont'd.)

TABLE 41 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - HADDOCK by A.M.Fleming
(cont'd) M. O'Hanlon

Commercial Landings

Vessel Type	Otter Trawlers				
Vessel Tonnage Class	151-500				
Division	30				3P South
Month	March	April	May	November	January
2-cm group	FREQUENCIES in ‰				
28-29	1	-	1	-	-
30-31	6	2	7	1	-
32-33	29	10	35	11	75
34-35	89	60	139	67	128
36-37	165	129	227	199	131
38-39	175	167	209	250	114
40-41	154	169	141	230	96
42-43	135	142	94	97	78
44-45	104	108	66	70	110
46-47	64	87	37	31	78
48-49	37	57	19	23	67
50-51	21	35	11	10	39
52-53	11	13	8	7	18
54-55	6	11	3	3	28
56-57	3	5	2	1	14
58-59	2	4	-	1	4
60-61	1	1	1	-	7
62-63	-	-	-	-	-
64-65	-	-	-	-	7
66-67	-	-	-	-	-
68-69	-	-	-	-	-
70-71	-	-	-	-	4
72-73	-	-	-	-	4
Total ‰	1003	1000	1000	1001	1002
Serial Numbers					
Number of Samples	24	3	16	5	1
Number Fish Measured	10,933	2305	5305	1832	282
Mean Length (cm)	40.54	41.73	39.14	39.78	41.81
Mean Weight (Kg)	0.64	0.70	0.59	0.65	0.79
Total Wt.Landed(Tons)	2767	1931	2394	1199	303
Estimated No. Landed	4,363,181	2,754,533	4,076,303	1,854,547	389,836
Mesh Size[1]	m&n	m&n	m	m&n	m
	(mesh sizes vary from 3 7/8" to 4 3/4")				
Range of Depths (fm)	44-105	42-50	43-60	39-45	90-100

1) m = manila; n = nylon

TABLE 42 GERMANY - 1960 LENGTH FREQUENCIES - HADDOCK[1] by Arno Meyer

Research Catches

Vessel Type	Otter Trawler
Vessel Tonnage Class	500-900
Division	1E
Month	September
2-cm group	F R E Q U E N C I E S in ‰
22-23	51
24-25	51
26-27	64
28-29	26
30-31	64
32-33	140
34-35	218
36-37	102
38-39	77
40-41	13
42-43	26
44-45	13
46-47	26
48-49	26
50-51	38
52-53	26
-	-
62-63	26
-	-
74-75	13
Total /oo	1000
Serial Numbers	511-95
Number of Samples	6
Number Fish Measured	78
Mean Length (cm)	36.1
Mean Weight (Kg)	
Total Wt. Landed (Tons)	
Estimated No. Landed	
Mesh Size (mm)	110
Range of Depths (fm)	90-100

[1] The age frequencies of these samples are given in Table 45; the age/length frequencies are given in Table 46.

TABLE 43 UNITED STATES/CANADA LENGTH FREQUENCIES - HADDOCK
CO-OPERATIVE PROGRAMME - 1960/61

by J.A.McCann
F.A.Dreyer
A.C.Kohler
D.N.Fitzgerald

ALL GEARS - Commercial Landings (in hundreds) Division 4X

Length (cm)	Feb.-Apr.	May-July	Aug.-Oct.	Nov.-Jan.	Total
<36[1]	-	13	57	239	309
36	-	12	29	149	190
37	68	36	71	222	397
38	180	66	151	216	613
39	338	55	443	335	1171
40	450	194	463	272	1379
41	743	276	446	365	1830
42	1376	277	978	412	3043
43	1420	380	1099	411	3310
44	1636	449	1029	401	3515
45	2121	629	825	401	3976
46	2319	885	696	451	4351
47	3042	1102	832	466	5442
48	3108	1264	1090	462	5924
49	2538	953	972	449	4912
50	2886	1003	1196	362	5447
51	2736	854	798	445	4833
52	2825	1226	932	467	5450
53	2775	1310	974	364	5423
54	2447	1505	1090	399	5441
55	2293	1131	646	409	4479
56	2429	1334	1060	389	5212
57	2230	1413	1100	407	5150
58	1713	1102	761	306	3882
59	1838	945	733	308	3824
60	1207	1084	856	232	3379
61	1106	891	593	214	2804
62	837	760	568	241	2406
63	715	558	440	167	1880
64	572	394	300	168	1434
65	475	342	238	111	1166
66	246	247	170	86	749
67	278	210	217	46	751
68	239	184	143	27	593
69	210	135	106	46	497
70	91	49	15	18	173
71	116	41	30	14	201
72	75	36	15	7	133
73	25	21	15	3	64
74	22	16	45	12	95
75	25	7	-	14	46
76	12	-	-	-	12
77	-	18	15	8	41
78	9	13	-	-	22
Total	49771	23420	22237	10521	105949

The samples and landings data are given on page 207.

(cont'd.)

[1] For breakdown, see page 207.

TABLE 43 UNITED STATES/CANADA LENGTH FREQUENCIES - HADDOCK by J A McCann
(cont'd.) CO-OPERATIVE PROGRAMME F A Dreyer
- 1960/61 A C Kohler
ALL GEARS - Commercial Landings (in hundreds) Division 5Y D N Fitzgerald

Length (cm)	Feb.-Apr.	May-July	Aug.-Oct.	Nov.-Jan.	Total
<36[1]	5	-	-	66	71
36	-	34	41	105	180
37	6	45	28	51	130
38	32	63	38	185	318
39	98	270	86	264	718
40	165	228	165	285	843
41	211	362	164	424	1161
42	277	417	274	311	1279
43	285	420	306	404	1415
44	308	301	363	785	1757
45	363	361	391	684	1799
46	346	444	390	486	1666
47	342	349	450	458	1599
48	367	246	428	463	1504
49	442	179	381	440	1442
50	458	333	397	376	1564
51	480	196	350	317	1343
52	450	256	393	301	1400
53	466	199	376	242	1283
54	396	215	320	207	1138
55	449	279	275	166	1169
56	452	310	307	161	1230
57	422	285	286	188	1181
58	322	366	257	206	1151
59	298	307	201	191	997
60	226	262	223	114	825
61	210	222	175	95	702
62	183	190	147	52	572
63	135	198	133	93	559
64	103	178	110	82	473
65	64	169	84	38	355
66	73	92	64	78	307
67	47	100	77	22	246
68	39	86	56	42	223
69	21	83	41	38	183
70	15	50	41	30	136
71	13	31	24	20	88
72	11	29	13	9	62
73	6	22	12	10	50
74	6	31	7	1	45
75	-	10	7	10	27
76	-	7	-	9	16
77	-	8	-	-	8
78	-	-	1	-	1
Total	8592	8233	7882	8509	33216

The samples and landings data are given on page 207.

[1] For breakdown, see page 207.

TABLE 43 UNITED STATES/CANADA (cont'd.) CO-OPERATIVE PROGRAMME - 1960/61

LENGTH FREQUENCIES - HADDOCK

SAMPLES AND LANDINGS DATA

by J A McCann
F A Dreyer
A C Kohler
D N Fitzgerald

ALL GEARS - Commercial Landings

Division 4X

Quarters	Feb.-Apr.	May-July	Aug.-Oct.	Nov.-Jan.	Total
No. Samples	69	23	5	18	115
No. Measured	6714	3370	1920	5257	17261
Mean Wt. of Fish (Kg)	1.63	1.68	1.56	1.25	1.59
Mean Length (cm)	51.9	53.9	51.7	49.6	51.8
Wt. Landings Sampled 1)	12.30	6.10	3.03	5.83	27.26
Wt. Total Landings 1)	8096	3946	3475	1313	16830
Est. No. in Landings 2)	4.977	2.342	2.224	1.052	10.595

Division 5Y

Quarters	Feb.-Apr.	May-July	Aug.-Oct.	Nov.-Jan.	Total
No. Samples	77	20	42	29	168
No. Measured	3732	1733	3679	2524	11668
Mean Wt. of Fish (Kg)	1.54	1.56	1.59	1.36	1.51
Mean Length (cm)	51.9	51.8	51.4	48.5	50.9
Wt. Landings Sampled 1)	6.09	3.50	6.95	3.39	19.93
Wt. Total Landings 1)	1317	1286	1260	1155	5018
Est. No. in Landings 2)	0.859	0.822	0.788	0.851	3.320

1) Metric tons, round fresh
2) In millions

BREAKDOWN OF <36 CM LENGTH FREQUENCIES

	4X				5Y		
Length (cm)	May-July	Aug.-Oct.	Nov.-Jan.	Total	Feb.-Apr.	Nov.-Jan.	Total
26	-	-	4	4	-	-	-
27	-	-	3	3	-	-	-
28	-	-	3	3	-	-	-
29	-	-	8	8	-	-	-
30	-	-	5	5	-	-	-
31	-	-	5	5	-	-	-
32	-	-	14	14	-	9	9
33	1	-	23	24	-	12	12
34	-	43	57	100	-	24	24
35	12	14	117	143	5	21	26
Total	13	57	239	309	5	66	71

TABLE 44 UNITED STATES - 1960/61 LENGTH FREQUENCIES - HADDOCK by J.A McCann F.A.Dreyer

Division 5Z Numbers Landed (in Hundreds)

Length (cm)	1960 Feb.	Mar.	Apr.	May	June	July	Aug.
31	-	-	-	-	-	-	-
32	-	-	-	-	-	-	-
33	-	-	-	-	-	46	-
34	-	-	46	-	22	-	27
35	-	-	116	32	123	224	80
36	8	30	208	71	355	468	266
37	40	66	382	79	455	1287	697
38	8	112	590	275	811	1569	1528
39	115	208	694	567	1550	2447	2308
40	197	210	836	708	1920	4011	3835
41	211	257	887	881	1881	3993	4744
42	274	195	874	960	1798	3814	5240
43	474	353	739	1006	1551	3769	5409
44	489	561	898	985	1213	2568	4208
45	795	503	965	630	918	2141	3430
46	819	541	885	900	1031	1336	2521
47	872	779	1158	1073	1062	1308	1620
48	886	780	1148	1011	980	904	1383
49	909	851	1111	1129	1169	1162	1146
50	834	741	992	946	985	845	1195
51	903	670	1051	891	966	952	914
52	995	619	958	868	888	1009	973
53	938	541	916	676	931	900	828
54	878	549	930	659	925	916	876
55	760	470	756	586	806	753	681
56	685	554	723	533	908	666	646
57	709	478	757	515	740	540	554
58	634	380	632	607	757	548	440
59	625	336	672	511	695	474	396
60	522	443	719	446	607	369	305
61	481	311	615	566	581	377	233
62	431	320	577	414	524	244	294
63	336	347	432	430	497	238	213
64	382	295	549	358	407	176	164
65	294	275	468	304	387	205	139
66	322	236	449	315	358	183	124
67	260	213	266	267	330	139	123
68	204	199	318	275	289	146	113
69	175	86	257	245	260	143	107
70	172	113	233	150	241	94	74
71	207	76	161	209	128	62	69
72	118	110	83	129	136	87	49
73	118	45	74	111	107	37	33
>73[1)]	159	126	245	249	231	166	116
Total	18239	13979	25370	21567	30523	41316	48101

(cont'd.)

The samples and landings data are given on page 210.

1) For breakdown, see page 210.

TABLE 44 UNITED STATES - 1960/61 LENGTH FREQUENCIES - HADDOCK by J.A. McCann
(cont'd.) F.A. Dreyer

Division 5Z Numbers Landed (in Hundreds)

Length (cm)	Sept.	Oct.	Nov.	Dec.	1961 Jan.	Total
31	-	-	-	-	20	20
32	-	24	-	11	40	75
33	26	-	-	21	20	113
34	52	16	33	53	148	397
35	131	187	51	146	178	1268
36	216	349	145	205	191	2512
37	726	697	178	316	283	5206
38	1219	1141	516	446	357	8572
39	1868	1653	646	425	649	13130
40	2755	2167	944	528	640	18751
41	3841	2740	1216	964	750	22365
42	3577	4006	1599	981	1032	24350
43	3750	4261	1710	1533	1462	26017
44	3793	4437	1841	1289	1561	23843
45	3196	3836	1505	1332	1273	20524
46	2158	3005	1289	1108	1114	16707
47	1783	2076	906	905	1131	14673
48	1268	1274	764	758	660	11816
49	1154	886	660	634	678	11489
50	957	489	724	383	344	9435
51	832	619	536	347	408	9089
52	769	599	463	414	401	8956
53	827	412	462	325	435	8191
54	557	453	401	297	369	7810
55	575	448	396	406	341	6978
56	629	464	470	536	400	7214
57	439	319	362	307	379	6099
58	366	354	345	239	408	5710
59	365	334	427	309	327	5471
60	335	328	354	234	301	4963
61	331	233	340	234	256	4558
62	187	249	204	228	319	3991
63	206	161	187	192	331	3570
64	135	156	144	170	242	3178
65	115	125	107	120	188	2727
66	84	77	140	124	157	2569
67	91	62	86	52	220	2109
68	49	68	78	23	229	1991
69	51	101	72	32	125	1654
70	13	58	34	32	85	1299
71	6	50	32	70	103	1173
72	10	22	26	7	72	849
73	-	18	16	9	67	635
>73[1)]	48	88	61	23	135	1647
Total	39490	39042	20470	16768	18829	333694

(cont'd.)

The samples and landings data are given on page 210.
1) For breakdown, see page 210.

TABLE 44 UNITED STATES - 1960/61 (cont'd.)

LENGTH FREQUENCIES - HADDOCK

by J.A.McCann
F.A.Dreyer

Division 5Z

SAMPLES AND LANDINGS DATA

	1960 Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.[4]	Nov.	Dec.	1961 Jan.	Total
Days fished	424	372	635	570	807	716	779	641	1913	518	712	672	8759[1]
No. length samples	62	44	44	40	62	55	77	38	42	37	22	34	557
No. scale samples	42	28	38	36	56	50	56	21	27	15	10	16	395
No. fish measured	2346	1912	3842	3232	4995	4489	5933	2958	2878	2667	1562	2492	39306
No. fish aged	348	242	581	606	938	841	936	356	440	243	166	288	5985
Mean Wt. Fish (Kg)	1.84	1.71	1.44	1.50	1.41	1.13	1.11	1.12	1.11	1.30	1.32	1.46	1.30
Mean lgth fish (cm)	53.8	53.0	51.6	51.6	49.7	45.7	45.4	45.5	45.4	47.6	47.6	48.9	47.9
Est. Wt. Landings sampled[2]	4.63	3.77	6.22	5.85	8.61	6.85	9.14	4.38	4.20	3.53	2.23	4.54	63.95
Wt. Total Landings[2]	3350	2387	3648	3230	4292	4651	5333	4411	4323	2668	2212	2751	43256
Est. No's. in Total Landings[3]	1.824	1.398	2.537	2.157	3.052	4.132	4.810	3.949	3.904	2.047	1.677	1.883	33.370

[1] Actual days fished (weighted by seasons) is 7669; [2] Metric tons, round fresh; [3] in millions; [4] Haddock, totalling 143,200 lbs were landed in Canada in addition to those landed in U.S.

BREAKDOWN OF >73 CM LENGTH FREQUENCIES (pages 208-209)

Length (cm)	1960 Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1961 Jan.	Total
74	63	38	52	108	86	44	39	13	26	16	9	54	548
75	43	50	49	61	58	43	25	10	18	8	-	44	409
76	18	13	58	51	32	11	27	13	11	16	7	13	270
77	15	9	24	7	18	21	9	3	14	16	-	4	140
78	-	10	26	-	7	18	9	6	11	5	-	4	96
79	7	-	12	11	11	4	5	-	4	-	7	4	65
80	7	6	21	-	7	14	2	3	4	-	-	4	68
81	6	-	3	7	11	4	-	-	-	-	-	-	31
82	-	-	-	-	-	7	-	-	-	-	-	-	7
83	-	-	-	-	1	-	-	-	-	-	-	4	5
84	-	-	-	4	-	-	-	-	-	-	-	4	8

TABLE 45 GERMANY - 1960 AGE FREQUENCIES - HADDOCK[1)] by Arno Meyer

Research Catches

Vessel Type		Otter Trawler	
Vessel Tonnage Class		500-900	
Division		1E	
Month		September	
Year-Class	Age	‰ Frequency	Mean Length
1959	1	205	25.5
1958	2	553	34.8
1957	3	177	43.2
1956	4	26	
<1956	>4	39	
Total ‰		1000	
Serial Numbers		511-95	
Number of Samples		6	
Number of Fish Aged		78	
Mean Age			
Mean Weight (Kg)			
Total Wt. Landed (Tons)			
Estimated No. Landed			
Mesh Size (mm)		110	
Range of Depths		90-100	

1) The length frequencies of these samples are given in Table 42; the age/length frequencies are given in Table 46.

TABLE 46 GERMANY - 1960 AGE/LENGTH FREQUENCIES - HADDOCK[1)] by Arno Meyer

Research Catches

Vessel Type	Otter Trawler					
Vessel Tonnage Class	500-900					
Location	1E					
Month	September					
Year-Class	1959	1958	1957	1956	<1956	Total
Age	1	2	3	4	>4	
2-cm group	FREQUENCIES in °/oo					
22-23	51	-	-	-	-	51
24-25	51	-	-	-	-	51
26-27	64	-	-	-	-	64
28-29	26	-	-	-	-	26
30-31	13	51	-	-	-	64
32-33	-	108	32	-	-	140
34-35	-	202	16	-	-	218
36-37	-	102	-	-	-	102
38-39	-	77	-	-	-	77
40-41	-	13	-	-	-	13
42-43	-	-	26	-	-	26
44-45	-	-	13	-	-	13
46-47	-	-	26	-	-	26
48-49	-	-	26	-	-	26
50-51	-	-	38	-	-	38
52-53	-	-	-	26	-	26
-	-	-	-	-	-	-
62-63	-	-	-	-	26	26
-	-	-	-	-	-	-
73-74	-	-	-	-	13	13
Total Number	205	553	177	26	39	1000
Mean Length (cm)	25.5	34.8	43.2			36.1

1) The length frequencies of these samples are given in Table 42; the age frequencies are given in Table 45.

SAMPLE DATA

Sample Serial Numbers	511-95
Number of Samples	6
Number of Fish Measured	78
No. of Fish Aged	78
Mean Length (cm)	36.1
Mean Weight (Kg)	
Total Wt.Landed (Tons)	
Mesh Size (mm)	110
Range of Depths (fm)	90-100

TABLE 47 UNITED STATES - 1960/61 AGE/LENGTH FREQUENCIES - HADDOCK

by J A McCann
F A Dreyer

Division	5Z								
Quarter	February-April								
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+
3-cm group	FREQUENCIES in ‰								
33-35	-	747	253	-	-	-	-	-	-
36-38	-	998	2	-	-	-	-	-	-
39-41	-	818	165	17	-	-	-	-	-
42-44	-	260	548	121	54	17	-	-	-
45-47	-	26	712	157	84	21	-	-	-
48-50	-	-	493	399	79	29	-	-	-
51-53	-	-	158	472	267	88	12	3	-
54-56	-	-	52	437	385	72	54	-	-
57-59	-	-	1	321	377	240	54	7	-
60-62	-	-	-	88	435	296	119	54	8
63-65	-	-	-	27	111	526	158	144	34
66-68	-	-	-	22	112	461	207	156	42
69-71	-	-	-	-	-	190	407	299	104
72-74	-	-	-	-	-	174	315	210	301
75-77	-	-	-	-	-	-	315	273	412
78-80	-	-	-	-	-	-	-	-	1000
81-83	-	-	-	-	-	-	-	-	1000

Division	5Z								
Quarter	May-July								
Age-Group	I	II	III	IV	V	VI	VII	VIII	IX+
3-cm group	FREQUENCIES in ‰								
33-35	-	975	25	-	-	-	-	-	-
36-38	19	980	1	-	-	-	-	-	-
39-41	-	958	33	5	4	-	-	-	-
42-44	-	874	112	7	7	-	-	-	-
45-47	-	368	474	106	52	-	-	-	-
48-50	-	48	584	289	79	-	-	-	-
51-53	-	-	446	383	134	37	-	-	-
54-56	-	-	244	458	217	58	19	4	-
57-59	-	-	41	415	400	109	28	5	2
60-62	-	-	10	230	426	245	63	17	9
63-65	-	-	-	88	340	377	123	61	11
66-68	-	-	-	17	140	512	181	123	27
69-71	-	-	-	-	41	268	388	118	185
72-74	-	-	-	-	-	-	242	252	506
75-77	-	-	-	-	-	-	204	166	630
78-80	-	-	-	-	-	-	127	111	762
81-83	-	-	-	-	-	-	-	-	1000
84-86	-	-	-	-	-	-	-	-	1000

(cont'd.)

AGE/LENGTH FREQUENCIES - HADDOCK

by J A McCann
F A Dreyer

5Z August-October

FREQUENCIES in o/oo

III	IV	V	VI	VII	VIII	IX+
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
-	-	-	-	-	-	-
28	6	-	-	-	-	-
32	12	7	-	-	-	-
120	118	38	10	-	-	-
536	248	74	4	18	14	-
665	589	186	35	20	-	16
158	392	384	147	63	34	40
41	194	401	252	167	74	15
16	49	249	446	229	240	-
-	-	104	427	148	505	238
-	-	-	109	492	408	100
-	-	-	-	-	136	864
-	-	-	-	-	-	-
-	-	-	-	-	-	-

5Z November-January

FREQUENCIES in o/oo

II	III	IV	V	VI	VII	VIII	IX+
986	14	-	-	-	-	-	-
60	3	-	-	-	-	-	-
230	-	-	-	-	-	-	-
946	-	-	-	-	-	-	-
1000	-	-	-	-	-	-	-
940	59	1	7	2	-	-	-
703	254	34	76	10	-	-	-
195	414	305	123	12	25	-	-
-	279	586	305	24	54	12	68
-	218	428	261	101	93	329	22
-	20	564	427	341	256	192	7
-	-	59	118	254	468	384	264
-	-	21	24	309	352	102	870
-	-	-	-	-	28	42	625
-	-	-	-	-	333	-	1000
-	-	-	-	-	-	-	1000
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

FLOUNDER

Guide to Tables

The numbers in the guide are page numbers. For a length frequency reference the page number alone is given.

PAGE NUMBERS

Division	OTTER TRAWL				OTHER GEARS			
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
L		218	219	220				
M	221		221	221,222				
O				222				
[illegible]			217					
[illegible]							223	

TABLE 48 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - AM. PLAICE by W.R.Martin D.N.Fitzgerald

OTTER TRAWLERS - Commercial Landings

Vessel Tonnage Class	0-25
Division	4T
Month	August
cm	FREQUENCIES in °/oo
33	4
34	18
35	27
36	75
37	89
38	84
39	66
40	58
41	93
42	53
43	71
44	80
45	49
46	40
47	13
48	22
49	27
50	18
51	13
52	22
53	22
54	18
55	-
56	13
57	9
58	-
59	4
60	4
61	4
62	-
63	-
64	4
Total °/oo	1000
Serial Numbers	
Number of Samples	1
Number Fish Measured	226
Mean Length (cm)	42.48
Mean Weight (Kg)	.87
Total Wt. Landed (Tons)	
Mesh Size (inches)[1]	4⅝p
Range of Depths (fm)	15-30

1) p = perlon

TABLE 49 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - AM. PLAICE by A.M.Fleming M. O'Hanlon

Commercial Landings

Vessel Type	Otter Trawlers								
Vessel Tonnage Class	151-500								
Division	3L								
Month	April			May			June		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
2-cm group	FREQUENCIES in ‰								
26-27	-	-	-	1	-	1	1	1	2
28-29	-	-	-	3	1	4	1	-	1
30-31	5	14	19	7	4	11	4	1	5
32-33	25	9	34	19	5	24	18	6	24
34-35	48	23	71	33	10	43	55	17	72
36-37	69	28	97	65	28	93	86	32	118
38-39	56	46	102	100	41	141	99	58	157
40-41	91	37	128	86	52	138	80	49	129
42-43	74	65	139	91	64	155	71	55	126
44-45	74	51	125	57	46	103	41	52	93
46-47	53	28	81	29	45	74	24	57	81
48-49	3	32	35	8	50	58	14	43	57
50-51	3	37	40	1	44	45	5	44	49
52-53	-	23	23	1	46	47	1	32	33
54-55	-	37	37	-	29	29	-	28	28
56-57	-	28	28	-	16	16	-	15	15
58-59	-	28	28	-	7	7	-	5	5
60-61	-	14	14	-	7	7	-	3	3
62-63	-	-	-	-	3	3	-	2	2
Total ‰	501	500	1001	501	498	999	500	500	1000
Serial Numbers									
Number of Samples			1			6			4
Number Fish Measured	197	108	305	911	784	1695	501	585	1086
Mean Length (cm)			42.97			42.85			42.28
Mean Weight (Kg)			0.71			0.72			0.73
Total Wt. Landed (Tons)			654			1333			1885
Est. Number (millions)			0.913			1.857			2.592
Mesh Size[1]			Lm			Lm&n			Lm&n
	(mesh sizes vary from 3 7/8" to 4 3/4")								
Range of Depths (fm)			48-60			48-80			55-87

[1] L = large; m = manila; n = nylon

(cont'd.)

TABLE 49 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - AM. PLAICE by A.M.Fleming
(cont'd.) M. O'Hanlon

Commercial Landings

Vessel Type	Otter Trawlers								
Vessel Tonnage Class	151-500								
Division	3L								
Month	July			August			September		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
2-cm group	FREQUENCIES in ‰								
< 16	2	2	4	-	-	-	-	-	-
16-17	3	4	7	-	-	-	-	-	-
18-19	3	3	6	-	-	-	-	-	-
20-21	5	2	7	-	-	-	1	-	1
22-23	3	2	5	-	-	-	3	1	4
24-25	18	3	21	-	-	-	5	3	8
26-27	20	6	26	-	-	-	6	4	10
28-29	23	5	28	-	2	2	9	2	11
30-31	19	1	20	1	2	3	7	3	10
32-33	15	17	32	10	4	14	25	6	31
34-35	27	9	36	30	16	46	28	11	39
36-37	40	8	48	23	21	44	48	11	59
38-39	53	10	63	73	29	102	68	21	89
40-41	40	18	58	68	34	102	75	30	105
42-43	86	23	109	113	34	147	80	37	117
44-45	66	33	99	75	52	127	72	33	105
46-47	48	41	89	69	56	125	39	37	76
48-49	21	59	80	28	59	87	20	50	70
50-51	6	61	67	7	72	79	15	65	80
52-53	2	76	78	1	49	50	-	49	49
54-55	-	46	46	-	30	30	-	55	55
56-57	-	32	32	-	14	14	-	24	24
58-59	-	22	22	-	14	14	-	21	21
60-61	-	9	9	-	6	6	-	13	13
62-63	-	2	2	-	4	4	-	9	9
64-65	-	6	6	-	1	1	-	4	4
66-67	-	4	4	-	-	-	-	8	8
68-69	-	-	-	-	-	-	-	4	4
70-71	-	1	1	-	1	1	-	2	2
Total ‰	500	505	1005	498	500	998	501	503	1004
Serial Numbers									
Number of Samples			4			3			4
Number Fish Measured	276	598	874	333	435	768	310	504	814
Mean Length (cm)			43.30			44.48			44.50
Mean Weight (Kg)			1.03			0.89			1.11
Total Wt.Landed (Tons)			1327			1148			890
Est. Number (millions)			1.293			1.292			0.797
Mesh Size[1]			Lm			Lm&n			Lm
	(mesh sizes vary from 3 7/8" to 4 3/4")								
Range of Depths (fm)			80-92			50-93			25-50 90-100

[1] L = large; m = manila; n = nylon

(cont'd.)

TABLE 49 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - AM. PLAICE by A.M.Fleming
(cont'd.) M. O'Hanlon

Commercial Landings

Vessel Type	Otter Trawlers								
Vessel Tonnage Class	151-500								
Division	3L								
Month	October			November			December		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
2-cm group	FREQUENCIES in °/oo								
14-15	-	-	-	-	3	3	-	-	-
-	-	-	-	-	-	-	-	-	-
22-23	-	3	3	5	-	5	-	-	-
24-25	-	9	9	-	-	-	-	-	-
26-27	9	6	15	-	3	3	-	4	4
28-29	14	16	30	-	3	3	-	2	2
30-31	14	6	20	-	-	-	-	2	2
32-33	14	9	23	5	3	8	6	19	25
34-35	61	25	86	13	3	16	18	12	30
36-37	47	38	85	53	7	60	51	17	68
38-39	61	50	111	63	39	102	73	38	111
40-41	75	60	135	151	50	201	93	55	148
42-43	108	50	158	95	35	130	97	37	134
44-45	33	41	74	87	58	145	65	55	120
46-47	47	72	119	10	60	70	58	56	114
48-49	19	47	66	19	51	70	28	62	90
50-51	-	13	13	-	46	46	9	57	66
52-53	-	25	25	-	22	22	1	29	30
54-55	-	9	9	-	21	21	-	26	26
56-57	-	6	6	-	28	28	-	8	8
58-59	-	3	3	-	26	26	-	6	6
60-61	-	3	3	-	13	13	-	3	3
62-63	-	3	3	-	13	13	-	4	4
64-65	-	-	-	-	15	15	-	5	5
66-67	-	3	3	-	5	5	-	1	1
68-69	-	-	-	-	-	-	-	1	1
Total °/oo	502	497	999	501	504	1005	499	499	998
Serial Numbers									
Number of Samples			1			2			2
Number Fish Measured	107	159	266	106	232	338	318	342	660
Mean Length (cm)			41.03			44.48			43.63
Mean Weight (Kg)			0.74			1.13			0.86
Total Wt.Landed(Tons)			2138			269			1219
Est. Number(millions)			2.866			0.237			1.422
Mesh Size[1]			Lm			Lm			Ln
	(mesh sizes vary from 3 7/8" to 4 3/4")								
Range of Depths (fm)			39-42			38-45 110-140			50-108

1) L = large; m = manila; n = nylon

(cont'd.)

TABLE 49 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - AM. PLAICE by A.M.Fleming
(cont'd.) M. O'Hanlon

Commercial Landings

Vessel Type	Otter Trawlers								
Vessel Tonnage Class	151-500								
Division	3N								
Month	January			September			October		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
2-cm group	FREQUENCIES in ‰								
26-27	-	-	-	-	1	1	-	-	-
28-29	-	-	-	-	-	-	7	5	12
30-31	10	3	13	3	4	7	10	18	28
32-33	14	18	32	30	15	45	40	18	58
34-35	67	50	117	49	39	88	43	41	84
36-37	100	61	161	77	37	114	60	18	78
38-39	91	35	126	76	25	101	60	14	74
40-41	67	50	117	82	36	118	83	37	120
42-43	52	29	81	63	32	95	99	46	145
44-45	57	53	110	69	29	98	66	46	112
46-47	14	41	55	31	42	73	27	69	96
48-49	14	44	58	17	51	68	3	46	49
50-51	10	32	42	3	54	57	3	46	49
52-53	5	23	28	2	43	45	-	60	60
54-55	-	23	23	-	38	38	-	14	14
56-57	-	9	9	-	29	29	-	9	9
58-59	-	18	18	-	12	12	-	5	5
60-61	-	12	12	-	9	9	-	5	5
62-63	-	-	-	-	3	3	-	5	5
64-65	-	-	-	-	-	-	-	-	-
66-67	-	-	-	-	3	3	-	-	-
Total ‰	501	501	1002	502	502	1004	501	502	1003
Serial Numbers									
Number of Samples			1			3			1
Number Fish Measured	105	171	276	400	336	736	151	109	260
Mean Length (cm)			41.70			43.07			42.18
Mean Weight (Kg)			0.78			0.82			0.85
Total Wt.Landed(Tons)			215			594			559
Est. Number(millions)			0.274			0.724			0.658
Mesh Size[1]			Ln			Lm&d			Ln
	(mesh sizes vary from 3 7/8" to 4 3/4")								
Range of Depths (fm)			48-60			45-117			48-80

[1] L = large; m = manila; n = nylon; d = drilene.

(cont'd.)

TABLE 49 CANADA (Newfoundland) - 1960 LENGTH FREQUENCIES - AM. PLAICE by A.M.Fleming
(cont'd.) M. O'Hanlon

Commercial Landings

Vessel Type	Otter Trawlers								
Vessel Tonnage Class	151-500								
Division	3N						3O		
Month	November			December			November		
Sex	♂♂	♀♀	Total	♂♂	♀♀	Total	♂♂	♀♀	Total
2-cm group	FREQUENCIES in ‰								
22-23	-	-	-	3	-	3	-	-	-
24-25	-	1	1	-	-	-	-	-	-
26-27	-	-	-	-	-	-	6	-	6
28-29	2	1	3	-	8	8	-	6	6
30-31	6	2	8	8	8	16	6	6	12
32-33	20	12	32	18	4	22	6	12	18
34-35	30	21	51	21	38	59	13	6	19
36-37	39	26	65	31	13	44	56	12	68
38-39	56	28	84	52	17	69	44	36	80
40-41	86	37	123	84	33	117	75	42	117
42-43	95	30	125	89	21	110	113	60	173
44-45	68	43	111	76	38	114	81	60	141
46-47	56	46	102	73	46	119	75	48	123
48-49	34	58	92	34	50	84	25	48	73
50-51	9	53	62	5	46	51	-	18	18
52-53	-	48	48	3	71	74	-	54	54
54-55	-	37	37	3	42	45	-	42	42
56-57	-	22	22	-	29	29	-	30	30
58-59	-	18	18	-	25	25	-	12	12
60-61	-	6	6	-	13	13	-	-	-
62-63	-	9	9	-	-	-	-	-	-
64-65	-	3	3	-	-	-	-	6	6
-	-	-	-	-	-	-	-	-	-
72-73	-	1	1	-	-	-	-	-	-
Total ‰	501	502	1003	500	502	1002	500	498	998
Serial Numbers									
Number of Samples			6			1			1
Number Fish Measured	673	600	1273	191	120	311	80	83	163
Mean Length (cm)			44.23			44.59			44.03
Mean Weight (Kg)			0.90			0.91			0.93
Total Wt.Landed(Tons)			648			459			46
Est. Number(millions)			0.723			0.503			0.049
Mesh Size[1]			Lm&n			Lm			Lm
	(mesh sizes vary from 3 7/8" to 4 3/4")								
Range of Depths (fm)			32-70			38-62			42

1) L = large; m = manila; n = nylon

TABLE 50 CANADA (Maritimes) - 1960 LENGTH FREQUENCIES - WITCH by W.R.Martin D.N.Fitzgerald

DANISH SEINERS - Commercial Landings

Vessel Tonnage Class	51-150
Division	4V
Month	September
cm	FREQUENCIES in °/oo
30	5
31	-
32	5
33	5
34	10
35	25
36	50
37	70
38	65
39	70
40	55
41	65
42	80
43	45
44	40
45	25
46	75
47	35
48	25
49	30
50	50
51	25
52	40
53	25
54	45
55	20
56	5
57	-
58	5
59	5
Total °/oo	1000
Serial Numbers	
Number of Samples	1
Number Fish Measured	200
Mean Length (cm)	43.66
Mean Weight (Kg)	0.70
Total Wt. Landed (Tons)	
Mesh Size (inches)	4½
Range of Depths (fm)	75-85