INTERNATIONAL COMMISSION FOR THE NORTHWEST ATLANTIC FISHERIES
Dalhousie University,
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Meeting Document No. 6.

ANNUAL MEETING- JUNE, 1962.

COMPILATION OF SELECTIVITY DATA

by

The Executive Secretary.

At the 1961 Annual Meeting the following recommendation prepared by the Working Group on Gear Research and Selectivity was passed:

> "The Chairman reviewed the tabulation of selection data submitted by various countries bringing the available information up to date. The Group felt that the Secretariat should compile these data, perhaps following the lead of ICES, and distribute the tabulation as a document".

The data then submitted were the following:

1. Canada, Nfld. (Templeman): Covered codend selection data for haddock, redfish, cod, American plaice, and witch.

2. Canada Mar. (Martin-McCracken): Covered codend (in cases with chafer) selection data for haddock, cod, redfish, and American plaice.

3. U.S.A., Woods Hole (Graham): Selectivity data for haddock, redfish and silver hake.

In a circular letter from the Secretariat of 6 November, 1961, member countries were requested to forward further selectivity data for inclusion in the above-mentioned compilation.

This request resulted in the following submissions:

4. United Kingdom, Lowestoft (Trout): Experiments on mesh selection for cod with manila codends, Barents Sea, 1958. (Reported at the 1959 Annual Meeting).

5. U.S.A., Woods Hole (Hennemuth): Silver hake selection experiments in July, 1961.

France and U.S.S.R. have reported that they have no data from ICNAF waters available; these data (European waters) have been reported to ICES. The same is assumed to be the case for other ICNAF countries not having reported selectivity data for this compilation.

The data submitted by Canada and U.S.A. (items 1,2,3 and 4) are given in Table 1 following - as far as possible - the scheme for the Mesh Selection Summary tables presented in Part III of ICES "Rep. of the Mesh Selection Working Groups meeting in Copenhagen December 1959 and 1960 (Ms.).

The information submitted by U. K. - in the form of graphs - is given in Fig. 1.

The following table gives a summary by species and net-material of the Canadian and U.S.A. selection factors reported:

	D. Man.	S. Man.	S. Cot.	S. Dak.	Courlen	D. Nyl.	S. Nyl.	Teryl.
Cod, Canada	3.28		3.65		3.90	3.80	3.89	4.10
Haddock, Canada	3.15		3.40			3.53	3.90	3.70
Haddock, U.S.A.	3.25			3.10			3.45	
Redfish, Canada	2.47							
Redfish, U.S.A.	2.37							
Silver Hake, U.S.A.	2.73	3.00	2.90				3.52	
American Plaice, Canada	2.16		2.50		2.10		2.30	
Witch, Canada	2.00							

TABLE 1. ICNAF MESH SELECTION SUMMARY Species---Cod. Gear---Otter trawl.
REGION: Subareas 3 and 4.

Author	Source or Locality.	Date	Ship length feet	Material D-double S-single	Runnage	Method	Mesh ins./mm	Selection Factor	Range 75-25% (cm)	No. of hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per tow of Total Catch (lbs) Codend	Mean Wt. per tow of Total Catch (lbs) Cover	Mean Haul Duration, min.
Canada:															
McCracken, F.D.	1)4V-W	July/53	117	D. Manila	45	Cov.Codend	4 3/8 111	3.5	6	2	700	200	1800	200	75
"	1)4V-W	Aug./53	"	" "	45	" "	5 1/8 130	3.1	12	2	600	500	900	400	75
"	1)4V-W	Sep./53	"	" "	45	" "	5 1/8 130	3.3	10	3	1100	500	2500	700	75
"	1)4T	Jun./54	46	" "	50	" "	4 7/8 124	3.3	11	10	100	100	100	50	45
"	1)4T	Jun./54	46	" "	50	" "	4 3/8 111	3.5	12	18	600	900	800	400	45
"	1)4T	Aug./54	56	" "	50	" "	4 5/16 110	3.2	10	9	1900	500	4200	300	90
"	1)4T	Aug./54	56	" "	50	" "	4 5/8 118	3.5	11	6	600	300	1800	300	90
"	1)4T	Jul./54	46	S. Cotton	45	" "	4 11/16 119	3.7	8	16	300	1000	800	900	45
"	1)4T	Aug./54	56	" "	45	" "	4 102	3.6	8	4	400	100	800	100	90
"	1)4T	Aug./54	56	D. Manila	50	" "	4 5/8 118	3.5	12	7	600	1100	1700	900	90
"	1)4T	Jul./55	56	S. Nylon	400	" "	4 11/16 119	3.9	6	28	1200	900	4200	600	90
"	1)4T	Jul./55	56	" "	400	" "	4 3/4 121	3.9	6	29	1700	600	6200	1100	90
"	1)4T	Aug./55	56	" "	400	" "	4 7/16 113	3.9	8	12	1000	1900	2300	700	90
"	1)4T	Aug./55	56	" "	400	" "	4 3/16 106	3.8	6	16	2300	3500	6600	1200	90
"	1)4T	Aug./55	56	D. Manila	75	" "	6 5/8 168	3.5	10	11	200	100	200	50	90
"	1)4T	Sep./55	56	" "	75	" "	4 3/8 111	3.4	9	12	1400	2800	1800	1200	90
"	1)4V-W	Jul./56	117	" "	50	" "	4 1/2 114	3.5	10	3	1000	1100	1900	1600	75
"	1)4V-W	Aug./56	"	D. Nylon	80	" "	4 3/8 111	3.8	7	14	1700	1300	3900	1100	75
"	1)4V-W	Aug./56	"	" "	80	" "	4 3/4 121	3.8	9	5	1500	800	4400	1400	75
Unpublished,	2)4T	Nov./59	78	D. Manila		" "	4 1/2 114	3.3	10	11	1500	2200	2300	1100	60
St. Andrews	2)4V-W	Aug./59	78	S. Terylene		" "	4 1/2 114	4.1	6	8	700	1500	2300	1200	30
Biol. Station															
"	2)4T	Oct./60	78	Courlene		" "	4 3/5 117	3.9	10	28	2000	5200	4000	4200	30
"	2)4T	Sep./58	56	D. Manila		" "	5 3/4 146	3.3	13	26	1700	2100	4000	2800	60

ICNAF Species....Cod..... Gear...Otter Trawl.....

Author Canada:	Source or locality Location experiment	Date	Ship length feet	Material D-double S-single	Run-nage	Method	Mesh (mm)	Selec-tion Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish codend	No. of Fish cover	Mean Wt. per tow of Total Catch (lbs) codend	Mean Wt. per tow of Total Catch (lbs) cover	Mean Haul Dura-tion . min.
W. Templeman S-41 ICNAF Lisbon Symposium 1957	Grand Bank and St. Pierre Bank	May-July, 1955	82	D. Manila	125/3	Covered codend	66	2.6		47	4,516	230			30
"	"	May-June, 1954	"	"	90/3	"	102	3.3	6.5	42	4,068	676			"
"	"	May-Oct., 1956	"	"	90/3	"	112	3.2	10.8	71	2,537	1,596			"

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Species. Haddock ..... Gear. Otter Trawl .....

Author	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Run-nage	Method	Mesh (ins.)	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per tow of Total Catch (lbs) Codend	Mean Wt. per tow of Total Catch (lbs) Cover	Mean Haul Duration. mins.
Canada:						Covered									
McCracken , F.D.	1) 4V-W	July/53	117	D.Manila	45 yd.	Codend	4 3/8	3.2	9	3	2600	1400	4600	700	75
"	1) 4V-W	Aug./53	"	"	"	"	5 1/8	3.1	12	6	3700	1700	8600	3800	75
"	1) 4V-W	Sep./53	"	"	"	"	5 1/4	3.3	11	4	1800	1100	4500	2300	75
"	1) 3P	Aug./53	"	"	"	"	4 1/8	3.0(?)	?	2	1600	700	3200	1100	75
"	1) 3P	Aug./53	"	"	"	"	4 3/4	?	?	5	12300	2800	22800	4200	75
"	1) 4T	July/54	46	S.Cotton	"	"	4 11/16	3.4	?	16	200	50	900	100	45
"	1) 4X	Nov./55	56	S.Nylon	400	"	4 3/4	4.0	7	15	400	900	1000	1400	90
"	1) 4X	Oct./55	56	D.Manila	75	"	4 3/8	3.2	9	12	800	300	1500	400	90
"	1) 4X	Nov./55	56	S.Nylon	400	"	4 3/16	3.8	8	27	1900	1200	4400	2500	90
"	1) 4V-W	Aug./56	117	D.Nylon	80	"	4 3/8	3.3	7	17	5900	2800	12000	3000	75
	1) 4V-W	Aug./56	"	" "	80	"	4 3/4	3.4	9	8	5300	1800	12800	2900	75
"	1) 4V-W	July/56	"	D.Manila	50	"	4 1/2	3.0	9	2	7500	1200	16300	1500	75
Unpublished,	2) 4W	Aug./58	78	D. Nylon		"	4 3/8	3.9	4	29	2000	7500	6100	3600	45
St. Andrews	2) 4W	Sep./58	78	D.Manila	75	"	5	3.1	10	15	4100	3300	7300	3200	60
Biol.Station	2) 4W	Sep./58	78	" "	75	Covered codend plus 4 7/8" Chafer	5	3.4	11	8	3300	2200	6000	2100	60
"	2) 4V-W	Jul./59	78	Terylene		Cov.Codend	4 1/2	3.7	7	24	1500	4900	3000	4100	45
"	2) 4W	Mar./60	175	D.Manila		" "	4 3/8	3.4	6	14	2100	1800	3300	800	60
"	2) 4W	Mar./60	175	D.Manila		" " plus 6 1/2" Chafer	4 3/8	3.3	6	9	1800	1100	3000	700	60
"	2) 4W	Mar./60	175	D.Manila		Cov.Codend plus 4-4 1/2" flap chafers	4 3/8	3.2	5	4	1100	400	2000	300	60

ICNAF Species....Haddock..... Gear....Otter Trawl....

Author Canada:	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Runnage	Method	Mesh (mm or ins)	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per tow of Total Catch (lbs) Codend Cover	Mean Haul Duration. mins.
W.Templeman S-41 ICNAF Lisbon Symposium 1957	Grand Bank and St. Pierre Bank	May-July/55	82	D.Manila	125/3	Covered codend	2.6in. (66 mm)	2.9	3.5	61	17,770	22	500	30
"	"	May-June/54	82	"	90/3	"	4.0in. (102mm)	3.1	6.2	56	26,868	29,352	780	"
"	"	May-Oct/56	82	"	90/3	"	4.4 in (112mm)	2.9	10.0	67	10,395	15,856	300	"

Author	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Runnage	Method	Mesh	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per individual Codend	Mean Wt. per individual Cover	Mean Haul Duration. mins.
U. S. A.															
Clark, J.R. 1957	Lisbon Paper S-27	1952	105 I Ser.I	D. Manila	50/4	covered codend	96	3.2	31.6-26.2	11		405		0.96	probably about 60
"	"	"	I Ser.II	"	"	"	98	3.2	33.9-27.8	5		955		0.84	"
"	"	"	II Ser. III	"	"	"	105	3.1	37.2-26.3	14		3684		1.02	"
"	"		111			"									
"	"	"	Ser.IGr.I	"	"	"	109	3.1	36.9-31.4	5		831		0.90	"
"	"	"	Ser.IGr.II	"	"	"	112	3.3	40.4-32.1	9		1932		1.08	"
"	"	"	Ser.I Gr.III	"	"	"	114	3.2	40.4-31.8	3		306		1.61	"
	Lisbon Papers S-25, S-27	"	Ser.II 179 Cruise 49	"	"	"	121	3.3	42.2-35.6	8		1470		1.22	"
"	"	1953	Ser.I	"	"	"	113	3.0	37.9-31.2	3		302		0.64	20
"	"	"	"	"	"	"	"	3.1	38.9-33.2	"		501		0.70	40
"	"	"	"	"	"	"	"	3.3	39.5-33.9	"		1239		0.56	60
"	"	"	"	"	"	"	"	3.4	41.5-34.5	"		773		0.74	80
"	"	"	Ser.II	"	45/4	"	123	3.0	41.9-34.4	8		2174		0.67	40
"	"	"	"	"	"	"	"	3.2	42.5-33.9	7		2346		0.82	60
"	"	"	"	"	"	"	"	3.3	44.1-37.4	8		7237		0.58	80
"	"	"	Ser.III	"	75/4	"	73	3.4	26.1-21.9	4		1516		0.32	40
"	"	"	"	"	"	"	"	3.5	25.9-22.2	4		1525		0.34	60
"	"	"	"	"	"	"	"	3.4	26.4-22.4	5		2972		0.34	80
"	Lisbon Paper, S-27	"	Cruise 51 Ser.I	"	45/4	"	107	3.0	32.9-28.8	14		2004		0.48	60
"	S-22, S-27	"	Ser.II	"	75/4	"	75	3.3	25.9-21.7	14		7070		----	60
"	Lisbon Paper S-27	"	Cruise 52	"	45/4	"	113	3.3	39.5-33.7	12		----		------	"

Author	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Run-nage	Method	Mesh (mm or ins)	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend Cover	Mean Wt. per individual Codend Cover	Mean Haul Duration. mins.
U.S.A.													
Clark, J.R.	Lisbon Paper S-27	1955	Cruise 59 Ser. I	D.Manila	45/4	covered codend	140	3.5	53.6-42.3	10	3065	1.73	56
"	"	"	Ser.II	"	"		154	3.4	57.8-43.8	"	2564	2.14	54
"	"	"	Ser. III	"	"		167	3.3	59.4-49.0	"	2294	2.15	60
		1956	Cruise 74	S.Dacron									probably
"	"		Ser, I	(braided)	?		127	3.1	41.9-35.8	15	2106	1.16	about 60
"	"	"	Ser.II	S.Nylon (braided)	#1000		105	3.8	42.2-37.1	11	2831	0.94	"
"	"	"	Ser.III	"	"		134	3.4	51.2-40.6	14	2113	2.06	"
"	"		Cruise 74	S.Nylon									
		"	Ser. IVA[1)]	"	"		122	3.1	40.9-32.3	10	931	1.27	"
		"	Ser.IVB[1)]		"		124	3.5	48.1-40.2	12	3259	1.43	"

1) Series IV A and IV B are for a single Nylon cod-end before and after reversal.

Author U.S.A.	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Run-nage	Method	Mesh	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per individual Codend	Mean Wt. per individual Cover	Mean Haul Duration. mins.
Clark, J.R. 1957	Lisbon Paper S-26	1954			(type)	covered codend (all except IIIb upper cover only									
		"	57 Ser. I	S. Manila (upper cover only)	750/4 ply		94	3.0	32.1-22.2	6		7427		0.46	about 60
		"	" " II	"	"	"	64	2.6	19.5-11.9	5		544		0.13	about 40
		"	" " IIIa	S. Nylon (upper cover only)	400/3 ply	"	103	3.8	46.0-29.9	6		2539		1.19	about 80
		"	" "IIIb	S. Nylon (upper & lower cover)	"		"	3.7	43.6-31.2	3		4428		0.74	about 60
		"	" "IVa	S. Nylon (upper cover only)	"	"	85	3.5	35.0-21.9	7		3284		0.75	"
		"	" "IVb	"	"	"	82	3.4	34.5-20.3	10		1217		1.39	"
		"	" "V	"	"	"	54	3.2	20.1-13.5	4		216		0.17	about 30
		"	" "VI	S. Cotton (upper cover only)	72 thread	"	96	3.4	37.8-22.8	4		3324		0.83	about 60
		"	" "VII	"	"	"	73	2.7	24.1-15.2	6		1514		0.37	"
		"	" "VIII	"	"	"	60	3.2	20.8-13.5	3		631		0.12	"
		"	" " IX	"	"	"	40	2.5	10.0-8.6	2		37		0.06	60
		"	" " X	"	" ?	"	35	2.7	9.9-7.1	3		21		0.04	about 45
		"	" "XI	D. Manila (upper coveronly	45-50/4	"	115	3.4	42.0-33.1	4		704		0.89	about 60

Species Silver Hake ..... Gear Otter Trawl .....

Author	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Run-nage	Method	Mesh	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per tow of Total Catch (lbs) Codend	Mean Wt. per tow of Total Catch (lbs) Cover	Mean Haul Duration. mins.
Data on File	Biol. Lab.. U.S. Bur. Comm. Fish., Woods Hole.	July, 1961	Delaware	D. Manila	45 yd./lb.	Covered net (1"cover)	3 ins.	2.23	25%=13 50%=17 75%=21	13	20,178	3251	587	18	30
							3 1/2 ins.	2.59	25%=18 50%=23 75%=27	21	16,047	17014	262	77	30

Author Canada:	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Run-nage	Method	Mesh (ins.)	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per tow of Total Catch (lbs) Codend+Cover	Mean Haul Duration
											ca.	ca.		
W. Templeman S-21 ICNAF Lisbon Symposium 1957	Grand Bank and St. Pierre Bank	May-July 1955	82	D. Manila	125/3	Covered codend	2.6	2.1	4.5	10	8650	450	380	30
											ca.	ca.		
"	Grand Bank	June/54	"	"	90/3	"	3.9	2.7	5.2	4	540	1160	270	30
											ca.	ca.		
"	Grand Bank	May/54	"	"	90/3	"	4.2	2.7	8.7	6	3900	10000	850	30
"	Grand Bank and St. Pierre Bank	May-Oct/56	"	"	90/3	"	4.4	2.6	8.8	17	4606	9888	350	30
"	Hermitage Bay, Nfld.	Sept.-Oct/56	62	"	100/3	"	4.4	2.5	8.9	39	20210	4622	720	30

Species.....Redfish.....Gear.....Otter Trawl

Author Canada:	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Runnage yds.)	Method	Mesh	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per tow of Total Catch (lbs) Codend Cover	Mean Haul Duration. mins.
McCracken, F.D.	4T	1956	98	D.Manila	50	Covered codend	4 1/2	2.4	8	10	27400	2300		120-180
Lisbon Symposium S-39	4T	1956	98	D.Manila	50	"	4 1/2	2.3	7	10	28900	1300		120-180

Species..... Redfish Gear..... Otter Trawl

Author U.S.A.	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Run-nage	Method	Mesh	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per individual Codend	Mean Wt. per individual Cover	Mean Haul Duration. mins.
Clark, J.R. 1957	Lisbon Paper S-29	1954	57 Ser.I	D. Manila	45-50/4?	Covered codend	115	2.5	31.1-23.9	8	507		0.53		60
"	"	"	Ser.II	"	50/4		99	2.4	24.2-20.6	3	923		0.15		60
"	"	"	Ser.III	"	75/4		69	2.3	16.3-13.4	4	124		0.10		60
"	"		179 Cruise#64		50/4-										
		1955	Ser.I	"	45/4?	"	132	2.4	33.7-27.0	2	1625		0.50		60
		"	Ser.II	"	45/4-50/4?		109	2.2	26.6-17.7	8	7620		0.34		60
		"	Ser.IIIa	"	75/4		80	2.2	19.2-14.5	4	370		0.20		60
		"	Ser.IIIb	"	75/4		82	2.6	22.1-18.1	3	643		0.18		60

Species. American Plaice ..... Gear. Otter Trawl ....

Author Canada:	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Run-nage	Method	Mesh (ins.)	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per tow of Total Catch (lbs) Codend	Mean Wt. per tow of Total Catch (lbs) Cover	Mean Haul Duration. mins.
McCracken, F.D.	3) 4T	Jul/54	46	S. Cotton	45	Covered codend	4 11/16	2.5	4	17	100	100	100	-	45
"	3) 4T	Jun/54	46	D. Manila	50	"	4 3/8	2.2	6	19	300	100	200	-	45
"	3) 4T	Jun/54	46	D. Manila	50	"	4 7/8	2.0	11	11	1100	600	800	100	45
"	3) 4T	Aug/54	56	D. Manila	45	"	4 1/2	2.0	6	2	1400	300	900	100	90
"	3) 4T	Jul/55	56	S. Nylon	400	"	4 3/4	2.2	7	19	2400	1100	2000	300	60
"	3) 4T	Aug/55	56	S. Nylon	400	"	4 7/16	2.4	8	10	300	200	200	-	60
Unpublished,	2) 4T	Sep/58	56	D. Manila		"	5 3/4	2.1	5	7	400	1100	200	200	60
St. Andrews Biol. Station	2) 4T	Oct/60	78	Courlene		"	4 3/5	2.1	9	14	1500	700	1000	100	30

Footnotes to datas reported by St. Andrews Biological Station:

1) Selection factors for cod and haddock with codends of different materials. Joint Sci. Meeting ICNAF/ICES/FAO, Lisbon, May 27-June 3, 1957, No. S-13.

2) Unpublished data on file at Biological Station, St. Andrews, N. B.

3) Selection by large mesh codends of flatfish and redfish. Joint Sci. Meeting ICNAF/ICES/FAO, Lisbon, May 27-June 3, 1957, No. S-39.

Author Canada:	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Runnage	Method	Mesh (ins)	Selection Factor	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per tow of Total Catch (lbs) Codend Cover	Mean Haul Duration. mins.
W.Templeman S-41 ICNAF Lisbon Symposium 1957	Grand Bank and St. Pierre Bank	May-July, 1955	82	D. Manila	125/3	Covered codend	2.6	2.3	3.2	12	263	7	See haddock for same trip.	30
"	"	May-June, 1954	"	"	90/3	"	4.0	2.3	12.1	18	563	119		30
"	"	May-Oct., 1956	"	"	90/3	"	4.4	2.2	7.6	60	1007	630		30

Author Canada:	Source or Locality	Date	Ship Length (feet)	Material D-double S-single	Runnage	Method	Mesh (ins)	Selection Factor.	Range 75-25% (cm)	No. of Hauls	No. of Fish Codend	No. of Fish Cover	Mean Wt. per tow of Total Catch (lbs) Codend Cover	Mean Haul Duration. mins.
W. Templeman S-40 ICNAF Lisbon Symposium 1957	Hermitage Bay, Newfoundland.	Sept. 6-12, 1956	62	D. Manila	100/3	Covered codend	4.4	1.8	8.8	29	2941	366	See redfish sheet. In these same sets an average of about 700 lb of redfish per set was caught	30
"	"	Sept. 27 - Oct. 5, 1956.	"	"	90/3	"	3.9	2.2	4.8	5	820	102		30

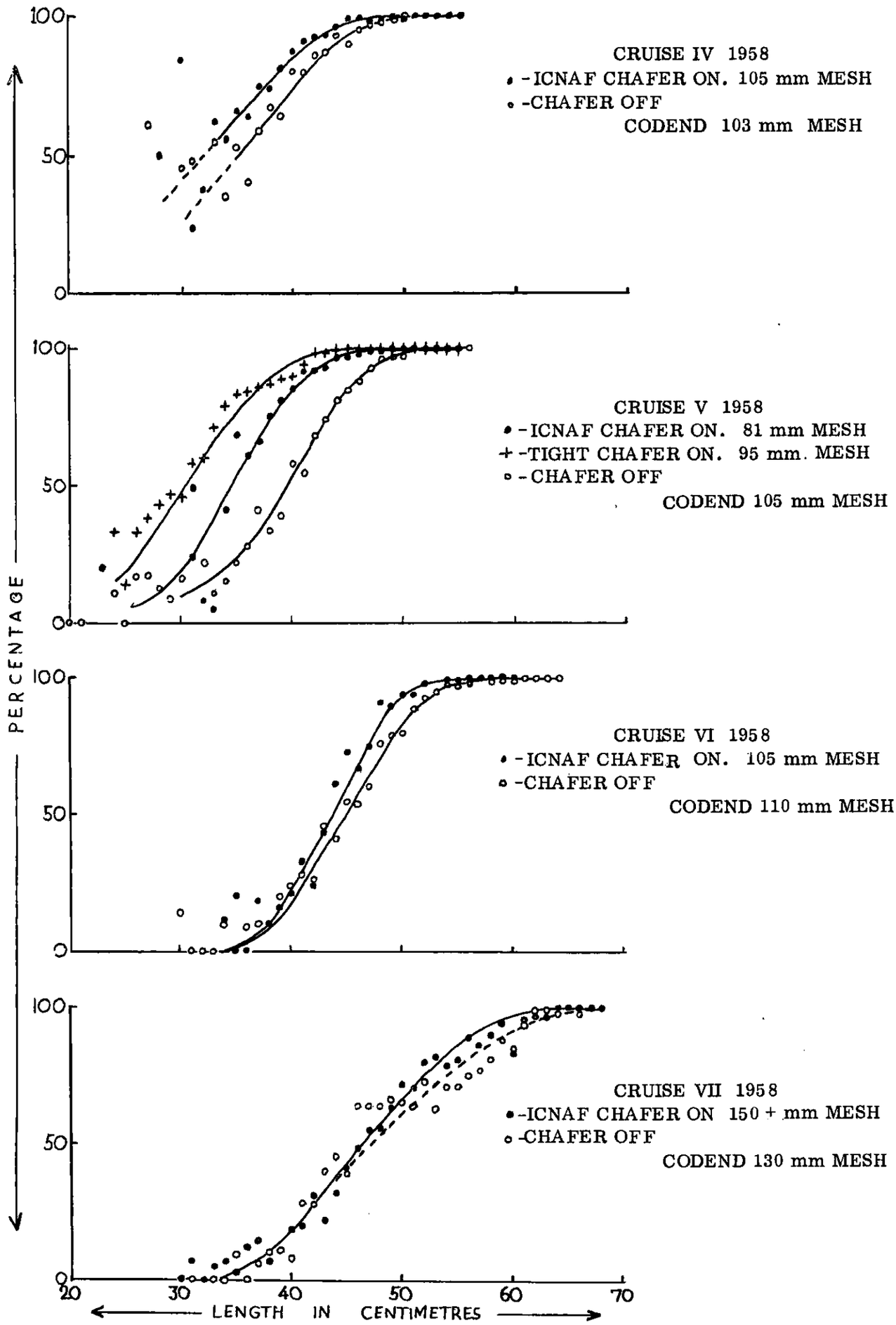

Fig. 1: United Kingdom: Exp. for cod with manila codends, Barents Sea. (vide ICNAF Annual Proceedings, Vol. 9, p. 86).