

ANNUAL MEETING - JUNE, 1964German Research Report, 1963.

SUBAREA 1

A. Status of the Fisheries.I. Cod.

In 1963 the German trawlers fished off West, South, and East Greenland again over the whole year. The landings increased further to 211,198 tons (242,964 tons round fresh weight), of which cod accounted for 58.4% and redfish for 35.2%.

Table 1

German landings from Greenland 1959 - 1963 in tons,
average annual catch per fishing day in brackets

		Cod		Redfish		Total	
W. Greenland (Subarea 1)	1959	13,394	(7.6)	17,600	(13.9)	33,056	(23.0)
	1960	19,186	(7.9)	20,289	(13.1)	42,978	(23.3)
	1961	70,156	(11.4)	39,959	(8.6)	120,900	(22.0)
	1962	102,129	(15.7)	51,308	(7.7)	168,452	(25.7)
	1963	112,325	(16.1)	39,525	(5.5)	168,832	(24.1)
E. Greenland	1959	9,691	(6.4)	19,186	(13.6)	30,869	(21.1)
	1960	15,378	(5.2)	30,250	(11.0)	49,421	(17.5)
	1961	11,232	(4.1)	24,292	(12.5)	37,968	(18.6)
	1962	11,489	(7.2)	23,103	(15.1)	36,334	(23.4)
	1963	10,979	(5.1)	28,893	(14.2)	42,365	(20.4)
Total Greenland	1959	23,082	(7.1)	36,785	(13.8)	63,927	(22.2)
	1960	34,560	(6.3)	50,538	(12.0)	92,389	(20.0)
	1961	81,388	(9.7)	64,249	(9.6)	158,871	(21.1)
	1962	113,618	(14.1)	74,410	(9.1)	204,787	(25.2)
	1963	123,305	(14.0)	68,414	(7.2)	211,198	(23.4)

Whilst the landings increased by 3.1% (1962 by 42%), the effort (fishing days) increased by 13.5%. Thus the catch per fishing day dropped from 25.2 tons to 23.4 tons. The small increase in landings was only caused by increased fishing for redfish off East Greenland.

From West Greenland (Subarea 1) the landings were the same as in 1962. There was a further increase in cod landings by 10.0%, but a marked decrease in redfish catches by 23.0%. Fishing off West Greenland in 1963 was characterized by two very different seasons, extremely good fishing possibilities (relatively warm winter and good weather) during the first half of the year (average daily catch 28.9 tons), but very poor fishing from July to December (average daily catch 17.7 tons). Fig. 1 shows that these poor fishing results in the autumn were caused by a pronounced slack period of cod, but much more by a lack of redfish. Since 1961, the West Greenland stock of redfish has gradually decreased to such a degree, that it can no longer fill the gap during the slack period of cod as in former years (1960, 1959 and the years before). The average annual catch of redfish per fishing day constantly dropped (Fig. 2) from 13.9 tons in 1959 to 5.5 tons in 1963. Thus, German trawler captains, greatly interested in catching the more profitable redfish, had to intensify cod fishing. Thus the average annual catch of cod per fishing day increased from 7.9 tons in 1959 to 16.1 tons in 1963. The poor yields from fishing off West Greenland during the second half of the year resulted in an increased fishing effort off East Greenland by 126%. But there are several indications, that the output of redfish is also decreasing in the East Greenland area.

As in 1962, the two rich year-classes of 1957 (of West Greenlandic origin) and 1956 (of East Greenlandic origin) were of essential importance (Fig. 3 and 4). They show the same typical distribution as in the preceding year, but the 1957 year-class has spread in the meantime more southward as all West Greenlandic year-classes do when they grow older. The previous rich year-classes of 1953, 1950, and 1947 nearly vanished, only off East Greenland were the 10 year old cod of some commercial importance. The research catches taken by the new German research ship "Walther Herwig" revealed two new year-classes of future importance for the Greenland fishery: the 1960 year-class on the northern banks of West Greenland and the 1958 year-class, apparently of East Greenlandic origin, on the southern grounds. On account of the age and length composition it may be expected that, in 1964, fishing for cod will be more profitable (especially during the first half of the year) in the southern part of Subarea 1 and off East Greenland.

B. Special Research Studies

I. Environmental Studies.

1. Hydrography. 5 sections (Fig. 4) were worked in December in spite of low temperatures, gales and ice. They indicate that the northern banks, particularly the "Little Halibut Bank", had temperatures higher than the southern banks. On the Little Halibut Bank the 2°C isotherm was found at 75m depth and the 5°C isotherm at 200 m. The Atlantic component of the West Greenland current was well developed with high temperatures of 5.55 to 5.75°C and salinities of 34.93 to 35.06 o/oo.

Unfortunately, little hydrographic work has been done up to now in winter. Thus we cannot say, whether these temperatures were normal or not. Compared with some German data collected in the middle of December, 1959, the upper cold water layer with less than 2°C was much thinner in December 1959, as on Fyllas Bank the 2°C isotherm only reached 30 m and 60 m on Noname Bank. The warm water of more than 5°C was found in 1959 in 220 m on Fyllas Bank. But it is known, that 1959 was one of the warmer years.

II. Biological Studies.

1. Cod. 135 recoveries from 2081 taggings (6.5%) mostly made off S.W., S., and S.E. Greenland were reported up to March, 1964. 26 cod (19%) were recovered off Iceland (15 off N.W., 7 off S.W., 1 off S., and 2 off E. Iceland), 6 cod (4%) were found off E. Greenland. All cod caught around Iceland were big, probably mature fish of 71-94 cm (average length 83.4 cm) and 7 - 12 years of age. Most of them were caught in spring. 9? cod were tagged in Division 1D and 1E in December, 1963.

SOUTH EAST GREENLAND

A. Status of the Fisheries.

I. Haddock.

In the ICNAF Annual Proceedings, Vol. 11, p. 51 the increasing occurrence of young haddock, 1-3 years old (mostly year-class 1958) off S.W. Greenland in 1960 was reported. In 1963, haddock were caught off S.E. Greenland primarily in fall and winter. Some trawlers landed up to 100 baskets per trip. The given length and age composition was collected from a landing of 84 baskets (2.7% of the total landing) from Walloe Bank in January 1964. The 1959 year-class is dominating with 68%. The 1960 year-class follows with 25%. As found in the 1960 catches the investigation of this sample again shows the fast growth of Greenlandic haddock. At the end of the fifth feeding period the 1959 year-class had reached an average length of 55.3 cm. This is approximately the same growth as off Iceland, but a more accelerated growth than in the N. E. Atlantic. From a comparison with the different strengths of the year-classes of haddock around Iceland (Table 1) we may presume that these haddock are of East Greenlandic

origin. This is further to the evidence of Corlett who found spawning haddock in April, 1963, on Fylkir Bank. This increase of haddock off S.E. Greenland-haddock are also often caught on the north-eastern grounds of E. Greenland, mainly on Gauss Bank (33-34° W) - corresponds with the constant increase in temperature off East Greenland (1951-1961: +0.8°C anomaly of surface water temperature and 0.2°C further increase in the last ten years as compared with the period of 1926 to 1950) as shown by Smed in Contribution No. H-5 to the ICNAF Environmental Symposium, 1964.

Table 1

Length and age composition of haddock caught off S.E. Greenland (January 1964) and off N.W. Iceland (June-July, 1963).

S.E. Greenland					N.W. Iceland		
Length (cm)	o/oo	Year-classes	o/oo	av. length	Year-classes	o/oo	av. length
40-44	35	1960 :	250	47.2	1960 :	198	41.6
45-49	215	1959 :	682	55.3	1959 :	119	50.8
50-54	329	1958 :	38	-	1958 :	139	54.9
55-59	320	1957 :	26	-	1957 :	554	59.9
60-64	79	1956 :	4	-	1956 :	80	66.7
65-69	18				1955 :	7	-
70-74	3				1954 :	1	-
75-79	1				1953 :	2	-

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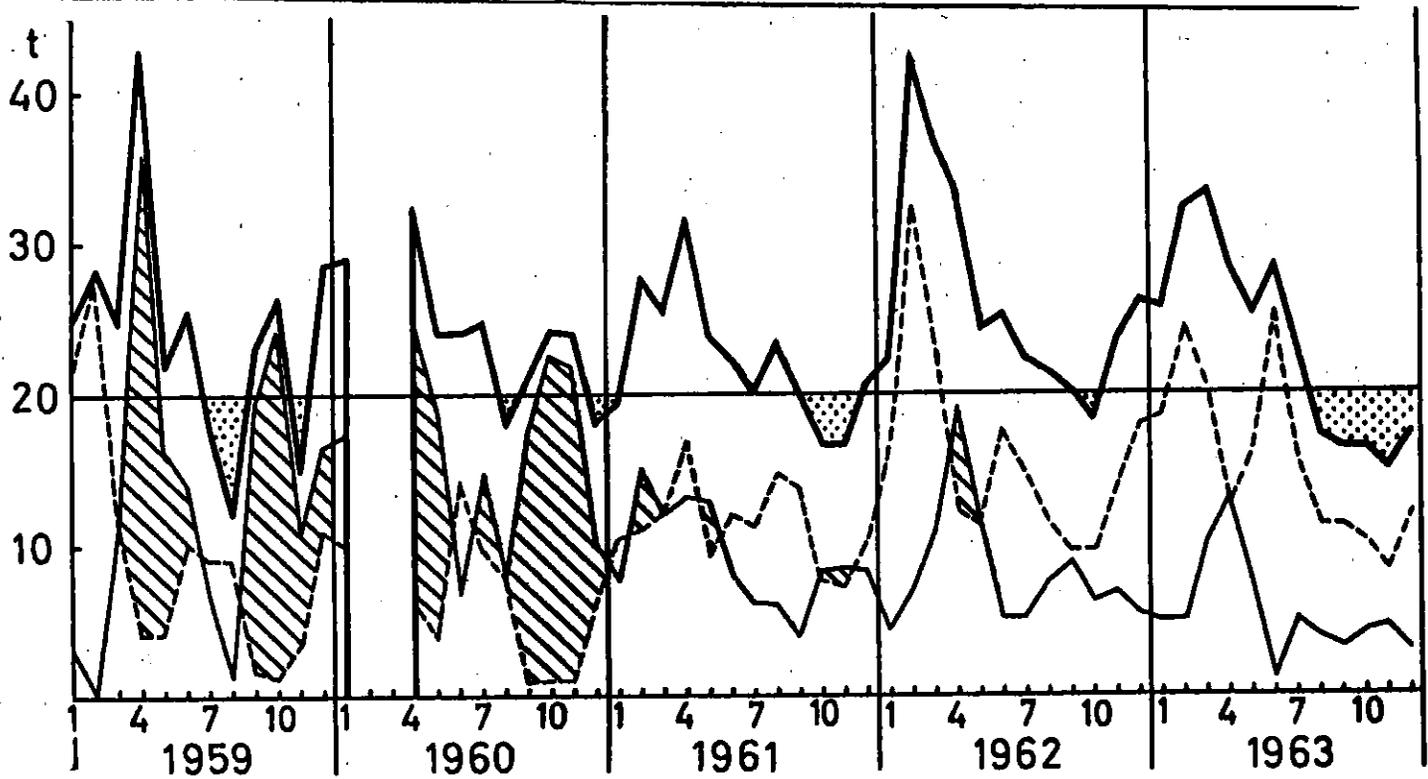


Fig. 1. Average monthly catch per fishing day of German trawlers in Subarea 1 in tons from 1959 to 1963. Thick solid line: total catch, broken line: cod, thin solid line: redfish, hatched section: redfish catches exceeding cod catches, dotted area: monthly catch per fishing day less than 20 tons.

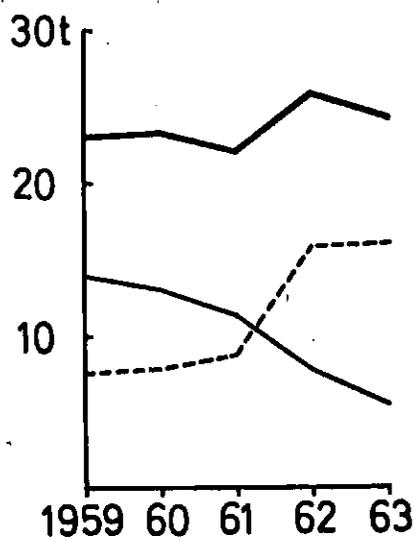


Fig. 2. Average annual catch per fishing day of German trawlers in Subarea 1 in tons from 1959 to 1963. Thick solid line: total catch, broken line: cod, thin solid line: redfish.

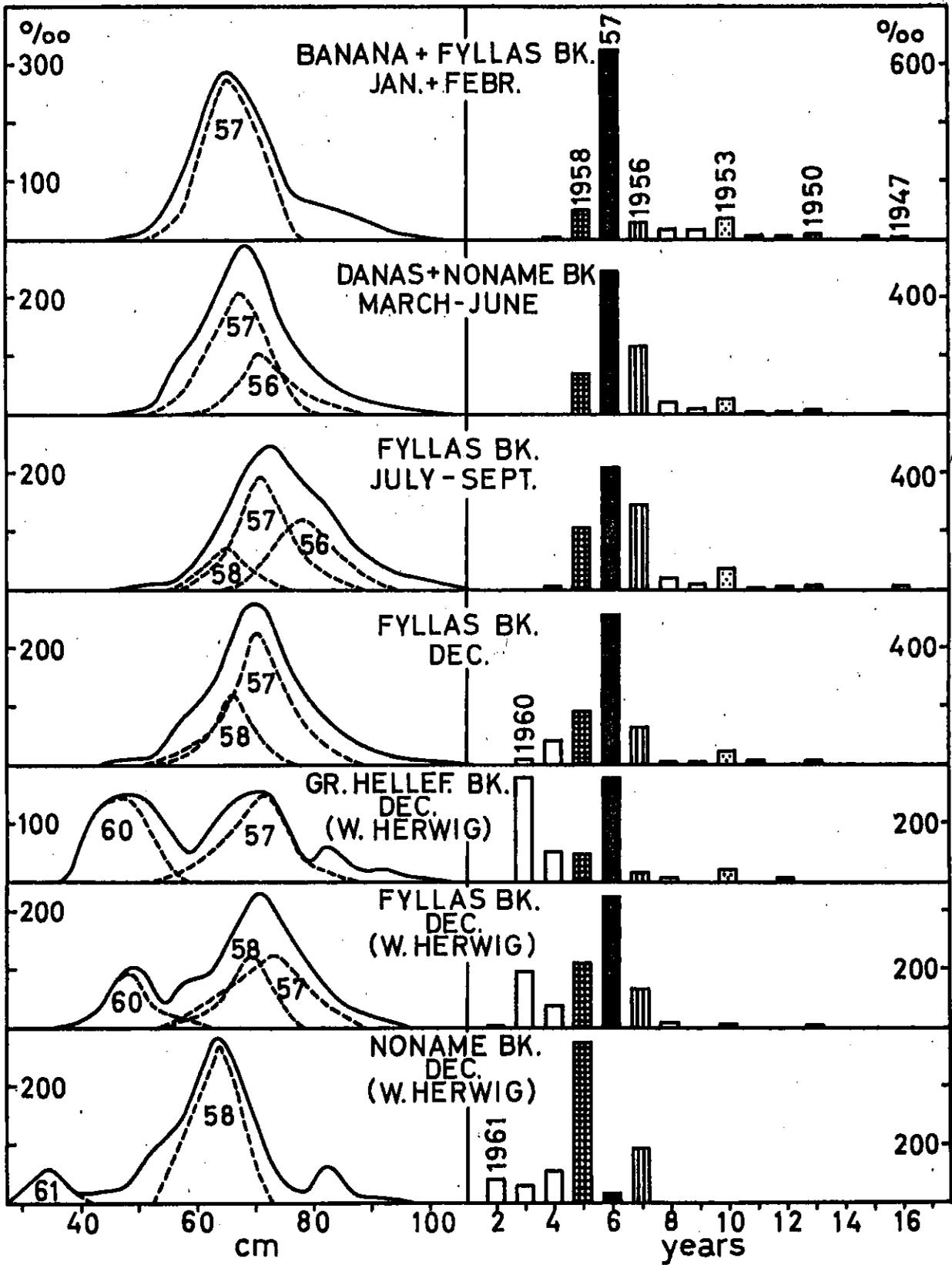


Fig. 3. Cod. Length and age distribution off West Greenland in 1963.

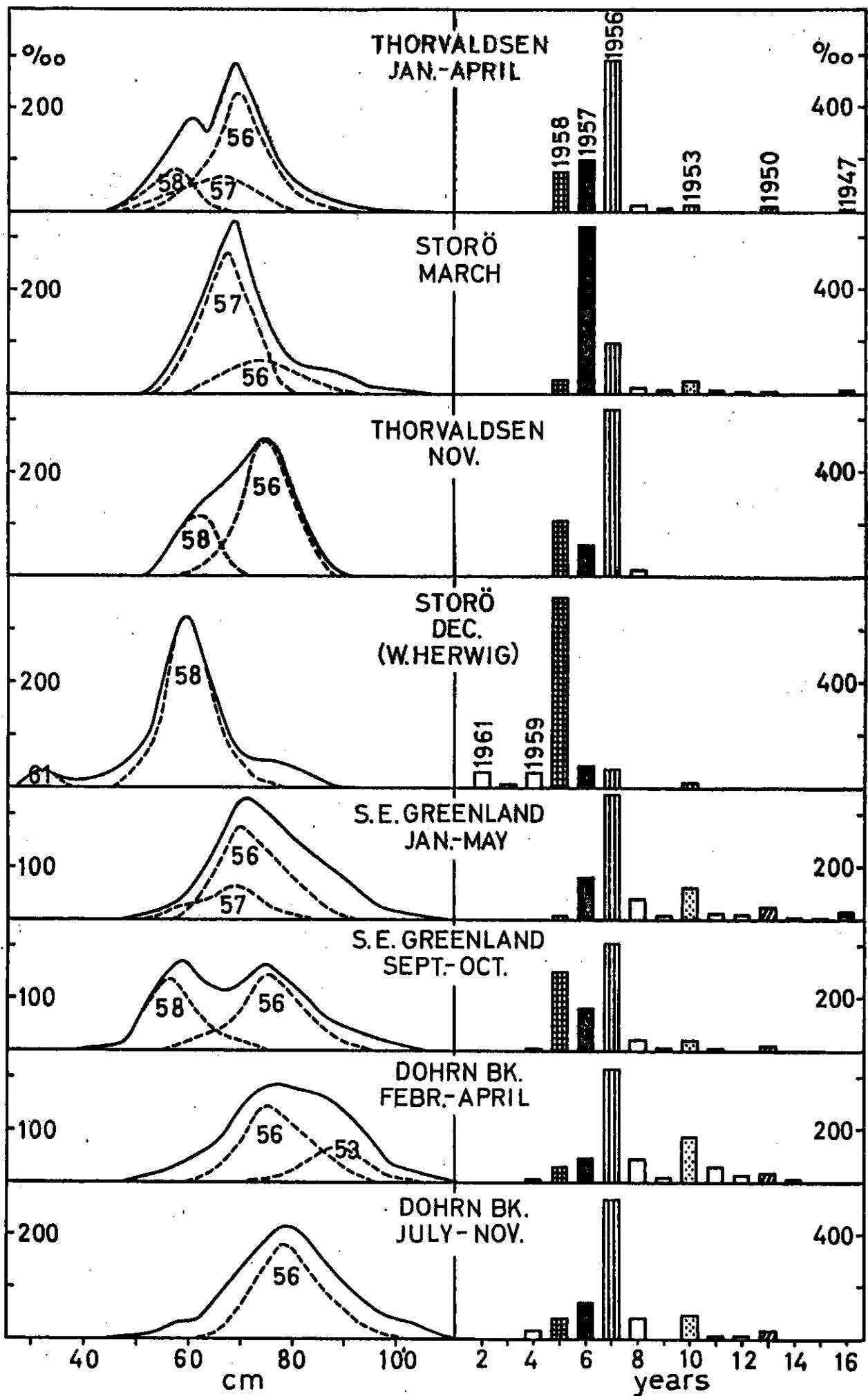


Fig. 4. Cod. Length and age distribution off South and East Greenland in 1963.

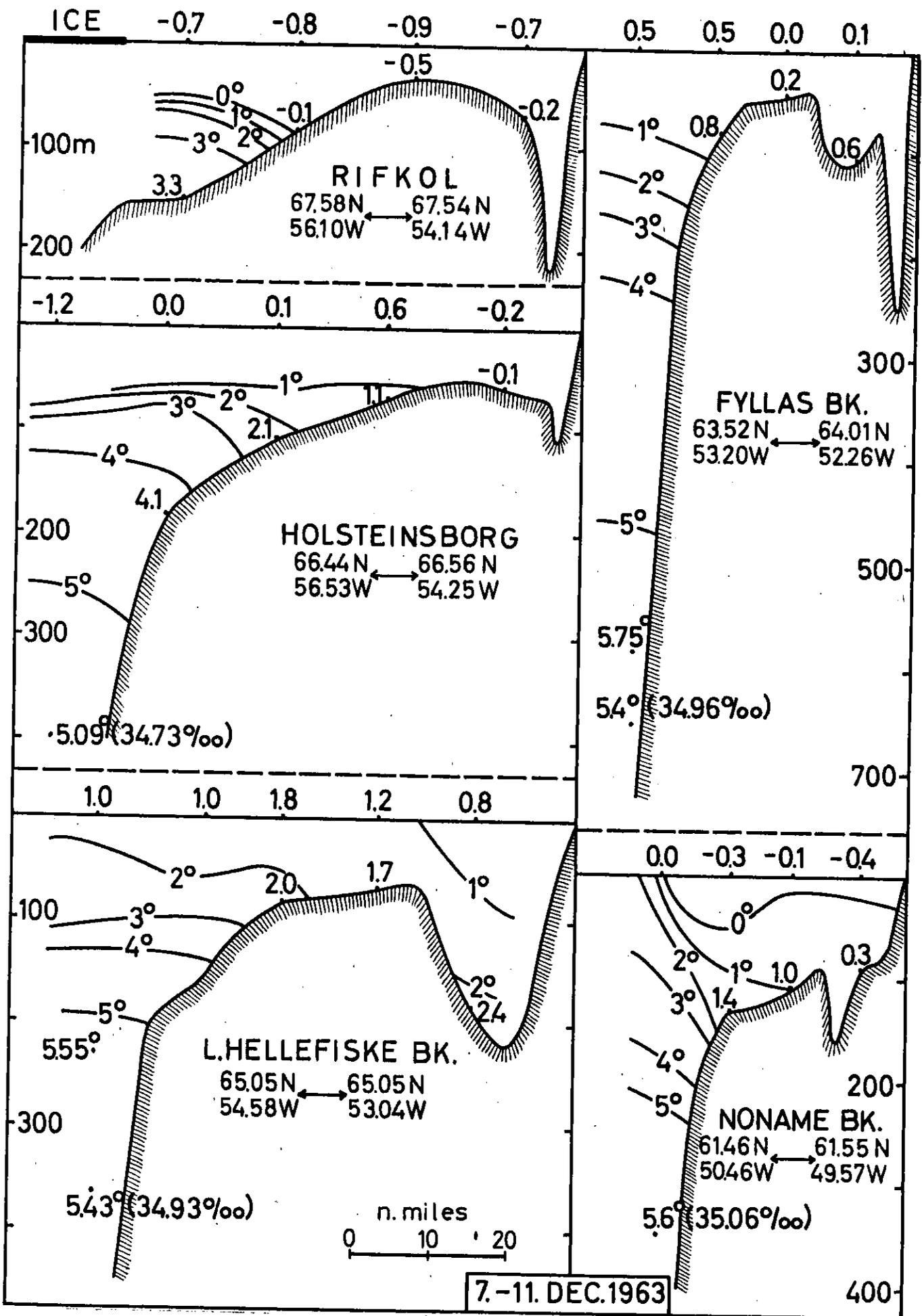


Fig. 5. Hydrographic sections off West Greenland, 7-11 December 1963.