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Subarea 1

In 1968, Norwegian fisheries investigations were carried out in the area between Nunarsuit and Sukkertoppen from 23 April to 14 May. Five hydrographical sections were worked. During the period from 24 April to 9 May bottom longline with No.2, 4 and 6 hooks was used at 9 localities, and from 6 May to 14 May trawling was carried out at 10 stations.

A. Status of the Fisheries

I. Cod

1. Age and length composition of the commercial stock. The 1961 year-class decreased from 48.8% in 1967 to 34.4% in 1968 in the total Norwegian research vessel catch on bottom longline (No.6 hook) but is still the dominating year-class. The 1960 year-class decreased from 31.6% to 9.2%. Older year-classes play a minor part in the catches. The 1963 year-class has increased rapidly, from less than 2% in 1967 to 24.6% in 1968 (Fig. 2). The total catch on bottom longline, No.2, 4 and 6 hooks combined, shows nearly the same picture as the catch on No.6 hooks (Fig. 3). The total trawl catch is dominated by the 1963 year-class, 36.6%, followed by the 1962 and 1961 year-classes with 27.8 and 21.2% respectively. Also in the trawl catches older year-classes play an insignificant part (Fig. 4).

The length composition in the total bottom longline catch is shown in Fig. 5. The overall mean length is considerably lower than in 1967. The mean length varied from one locality to another and the smallest fish were caught off Nunarsuit (Table 1).

Figure 6 shows the length composition in the total trawl catch. The overall mean length is 62.3 cm which is considerably lower than in 1967 when the overall mean length in the trawl catches was 66.3 cm.

2. Forecast for the cod fisheries. The Norwegian bottom longline catches off West Greenland in 1969 will most probably be dominated by the 1963 year-class. The 1960, 1961 and 1962 year-classes are expected to decrease. The mean length of the cod will likely also decrease, and a decline in the catch per unit effort for the Norwegian longliners is to be expected.

B. Special Research Studies

I. Environmental Studies

1. Hydrography. Between 24 April and 2 May 5 hydrographic sections were worked (Fig. 1). The ice conditions were not as severe as in 1967 and only the westernmost station in the section along 65°N was omitted due to ice.

The sections off Frederikshaab and across Fylla Bank (Fig. 7 and 8) show that the Arctic component of the West Greenland Current was well developed also in 1968. The distribution of temperature and salinity was much like that in 1967. Thus the mean temperature, -0.91°C , in the upper 50 m in the Fylla Bank area was about the same as in 1967, -0.95°C , and the mean salinity was 33.584‰, in 1967 33.657‰. These means are based on observations at the standard depths between 0 and 50 m at the 5 eastern stations in the section across the Fylla Bank. Such means have been worked out for the years 1959-1968 and the ten year mean for this period is -0.04°C and 33.769‰.

The vertical extent of the Arctic water seems to have increased compared with the situation at the same time in 1967. This is in agreement with the somewhat less stable stratification which was observed in 1968 compared with the stratification in the three preceding years.

The temperature and salinity in the Irminger component of the West Greenland Current have decreased since 1967. Temperatures above 5°C were observed only in the section along 65°N. The highest salinities in this section did not exceed 34.96%. In the three southern sections temperatures above 4.15°C were not observed and in the southernmost section only, off Nunarsuit, a few salinities exceeded 34.95%.

II. Biological Studies

1. Cod eggs. Sampling of cod eggs was carried out at all stations. The preliminary results indicate a medium successful spawning compared with other years.

2. Cod distribution. The echo survey and the bottom longline fishing showed a few very small shoals of cod in the area investigated. The bottom longline and the trawlcatches were the smallest ever obtained off West Greenland by Norwegian research vessels. Pelagic shoals were not located.

III. Selection experiments

Selection experiments with No.2, 4 and 6 hooks on bottom longline were carried out on all fishing stations. The results indicate that the No.6 hook takes the fish with the smallest lengths but caught the greatest number.

Table 1. Mean length of cod taken on bottom longline gear using No.2, 4 and 6 size of hooks off West Greenland.
 R/V *G. L. Sava* 1967; R/V *Johan Hjørt* 1968. (Number of cod lengthed in parentheses).

Stn No	Bank	Position		Hook No.						Total	
				6		4		2		1967	1968
				1967	1968	1967	1968	1967	1968	Mean Length	Mean Length
1	Off Nunarsuit	N60°22' W48°12'	N60°40' W49°03'	69.2	60.8 (75)	69.8	63.2 (56)	70.9	65.9 (42)	69.4 (170)	62.8 (173)
2	Noname Bank	N61°46' W50°40'	N61°51' W50°39'	69.8	63.6 (29)	69.9	62.7 (19)	71.1	62.4 (14)	70.0 (157)	63.1 (62)
3	Frederikshaab Bank	N62°18' W50°57'	N62°17' W50°57'	69.1	67.4 (40)	68.3	72.2 (37)	69.8	71.9 (18)	69.0 (277)	70.1 (95)
7	Fylla Bank	N64°10' W53°05'	N64°07' W53°06'	69.9	69.1 (12)	68.8	75.8 (4)	69.6	54.7 (3)	69.4 (183)	68.2 (19)
8	Fiskenaes Bank	N63°15' W52°17'	N63°26' W52°31'	66.7	67.3 (12)	68.5	63.5 (8)	69.0	67.8 (4)	67.8 (369)	66.1 (24)
9	Dana Bank	N62°50' W51°45'	N62°59' W51°53'	67.6	66.1 (27)	67.8	65.5 (11)	68.8	66.5 (13)	67.9 (356)	66.1 (51)
Tot.				68.3	64.2 (195)	68.6	66.2 (135)	69.6	66.3 (94)	68.7 (1512)	65.3 (424)

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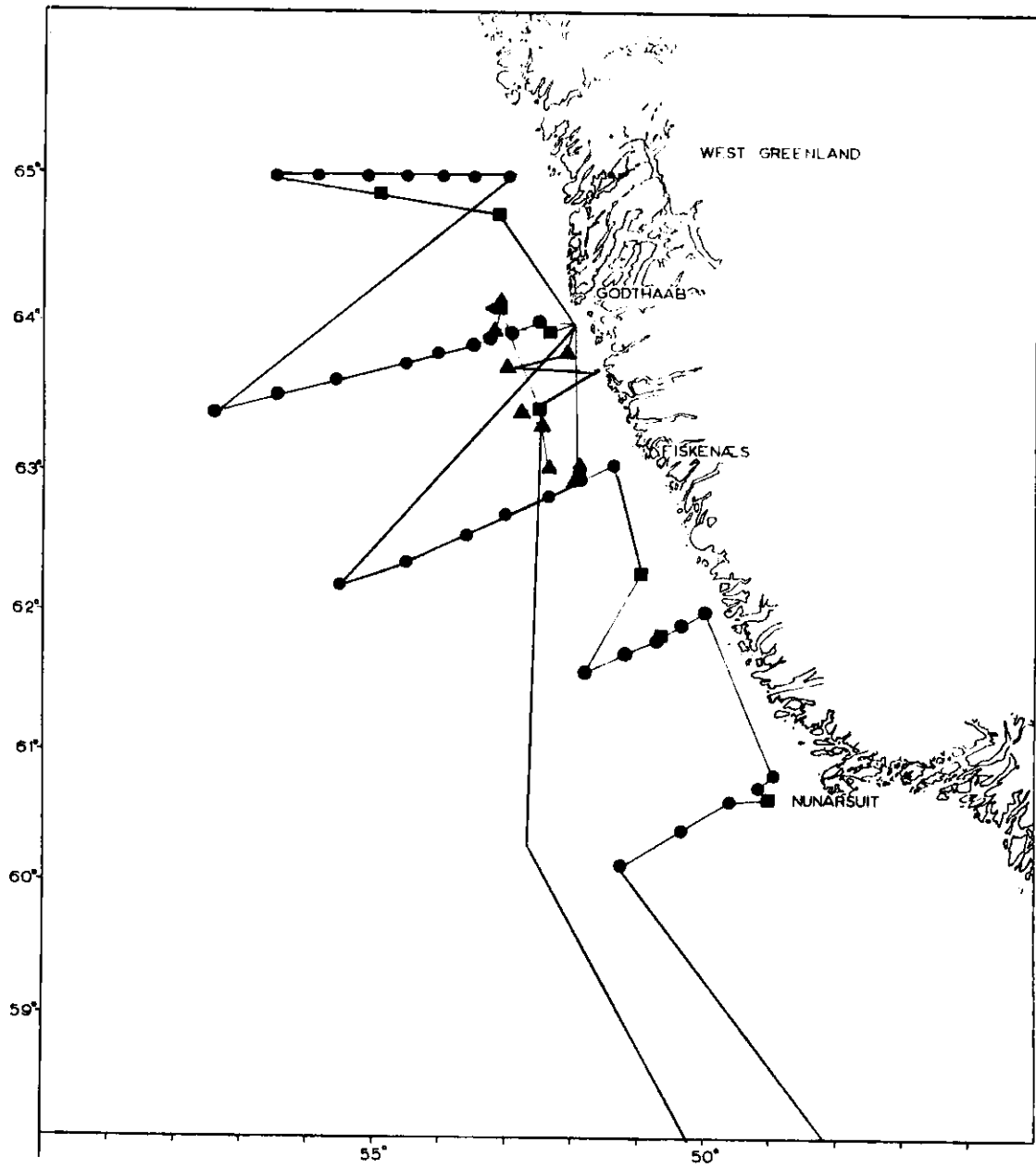


Fig. 1. R/V *Johan Hjort*, West Greenland, April-May 1968. Route and net of stations - ● : hydrographical station; ■ : bottom longline station; ▲ : trawl station.

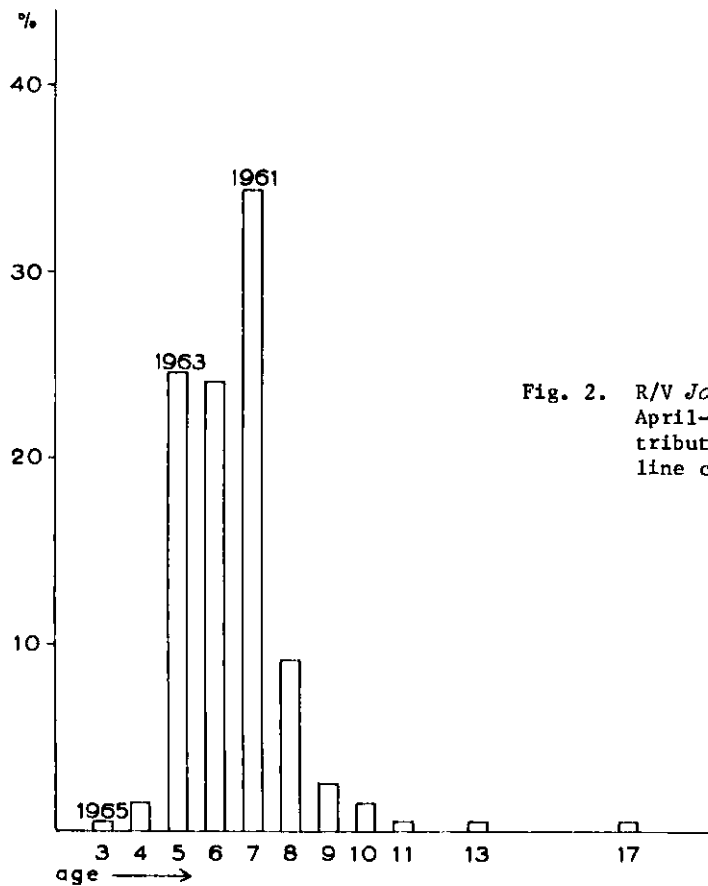


Fig. 2. R/V *Johan Hjort*, West Greenland, April-May 1968. Cod. Age distribution. Total bottom long-line catch, No.6 hook.

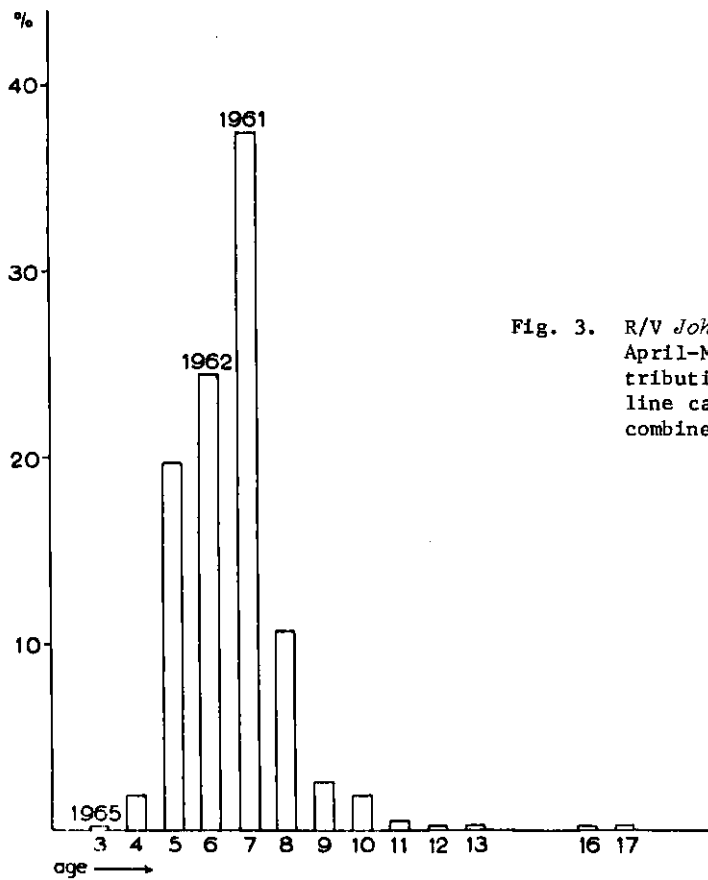


Fig. 3. R/V *Johan Hjort*, West Greenland, April-May 1968. Cod. Age distribution. Total bottom long-line catch, No.6, 4 and 2 hooks combined.

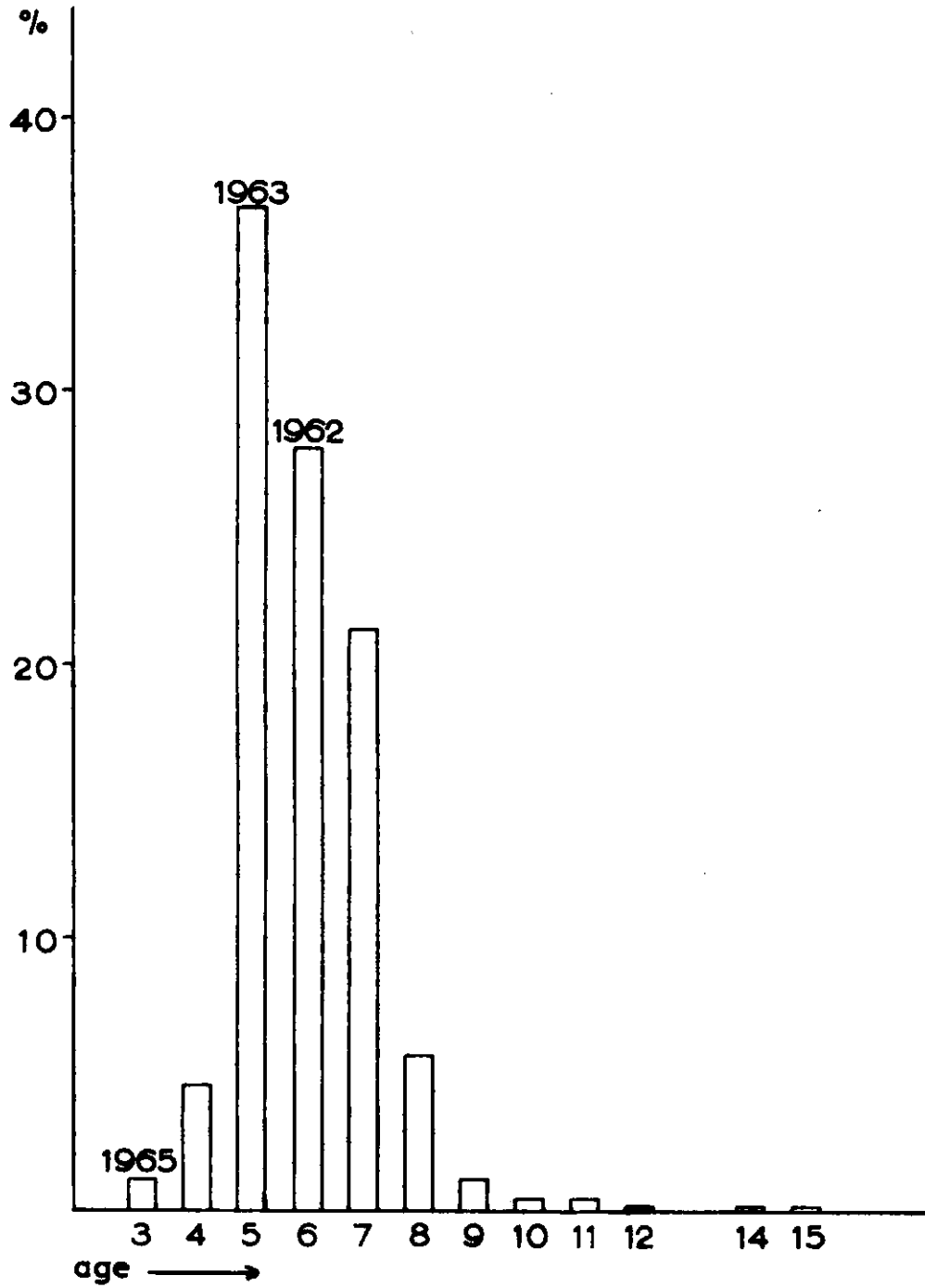
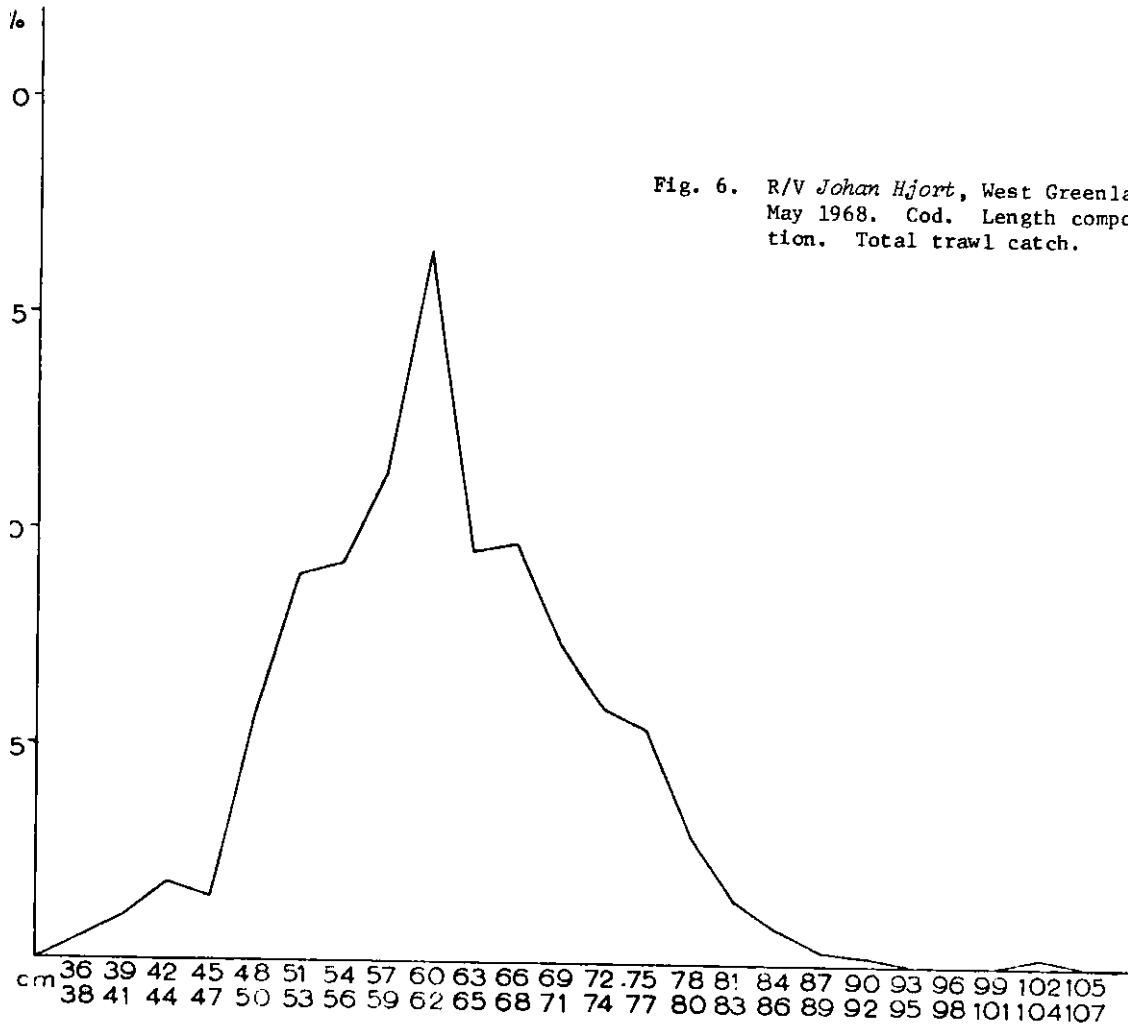
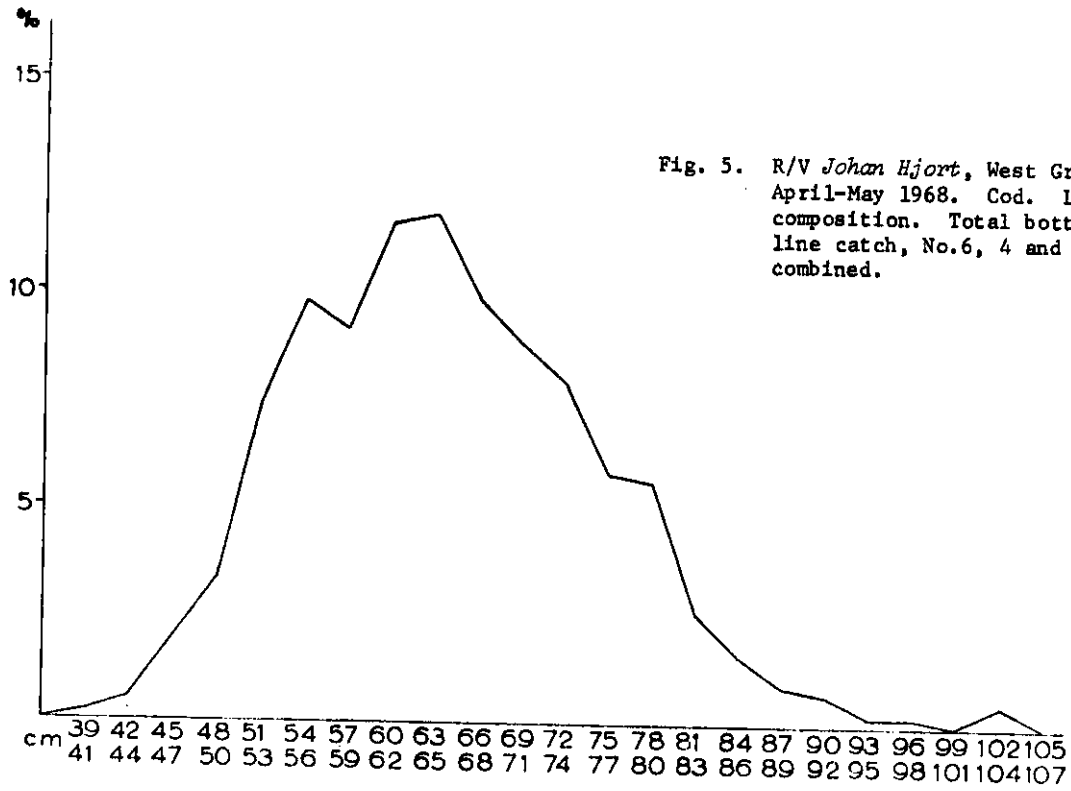


Fig. 4. R/V Johan Hjort, West Greenland, May 1968. Cod. Age distribution. Total trawl catch.



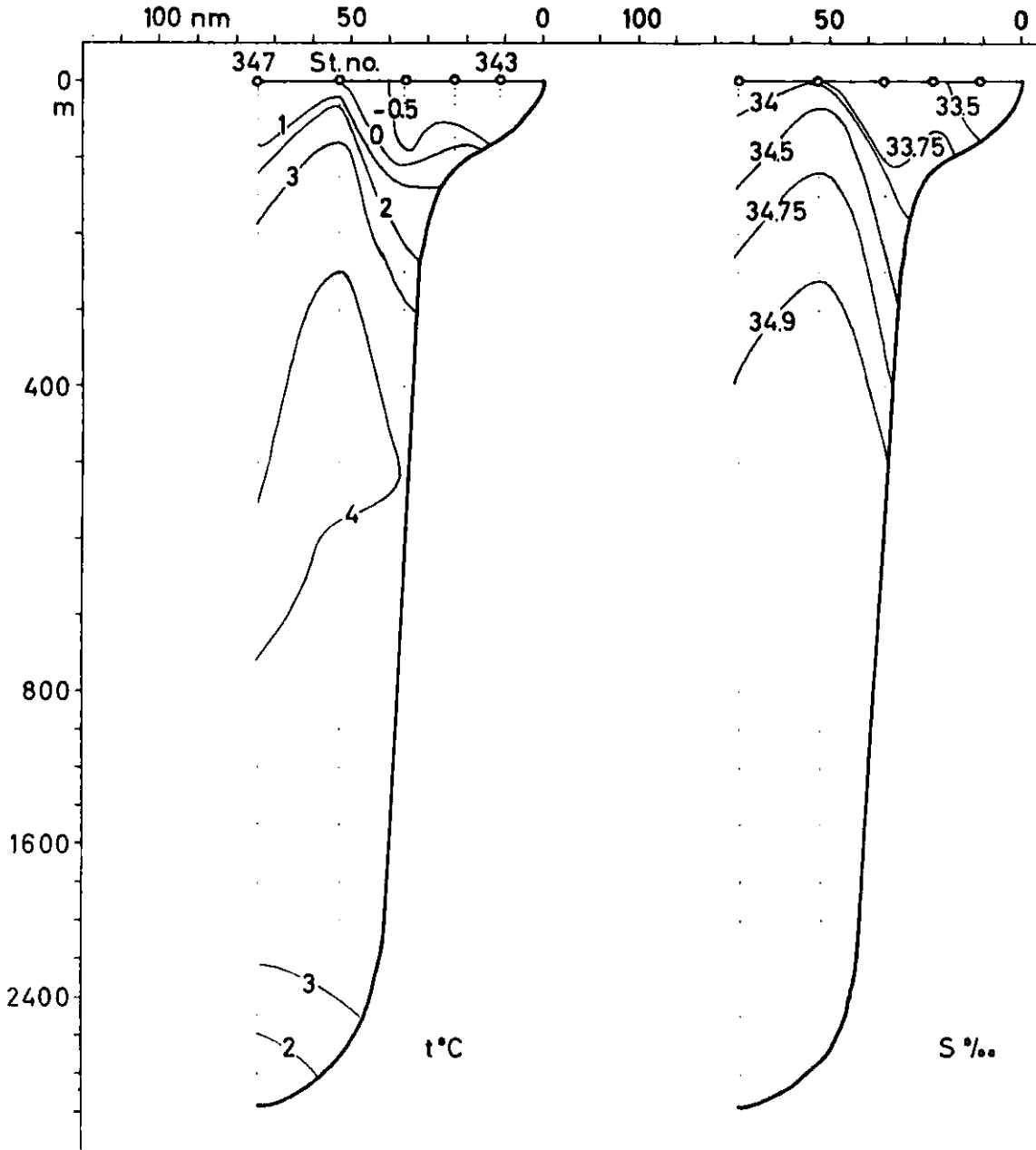


Fig. 7. R/V *Johan Hjort*, West Greenland, 25 April 1968. Hydrographical section off Frederikshaab.

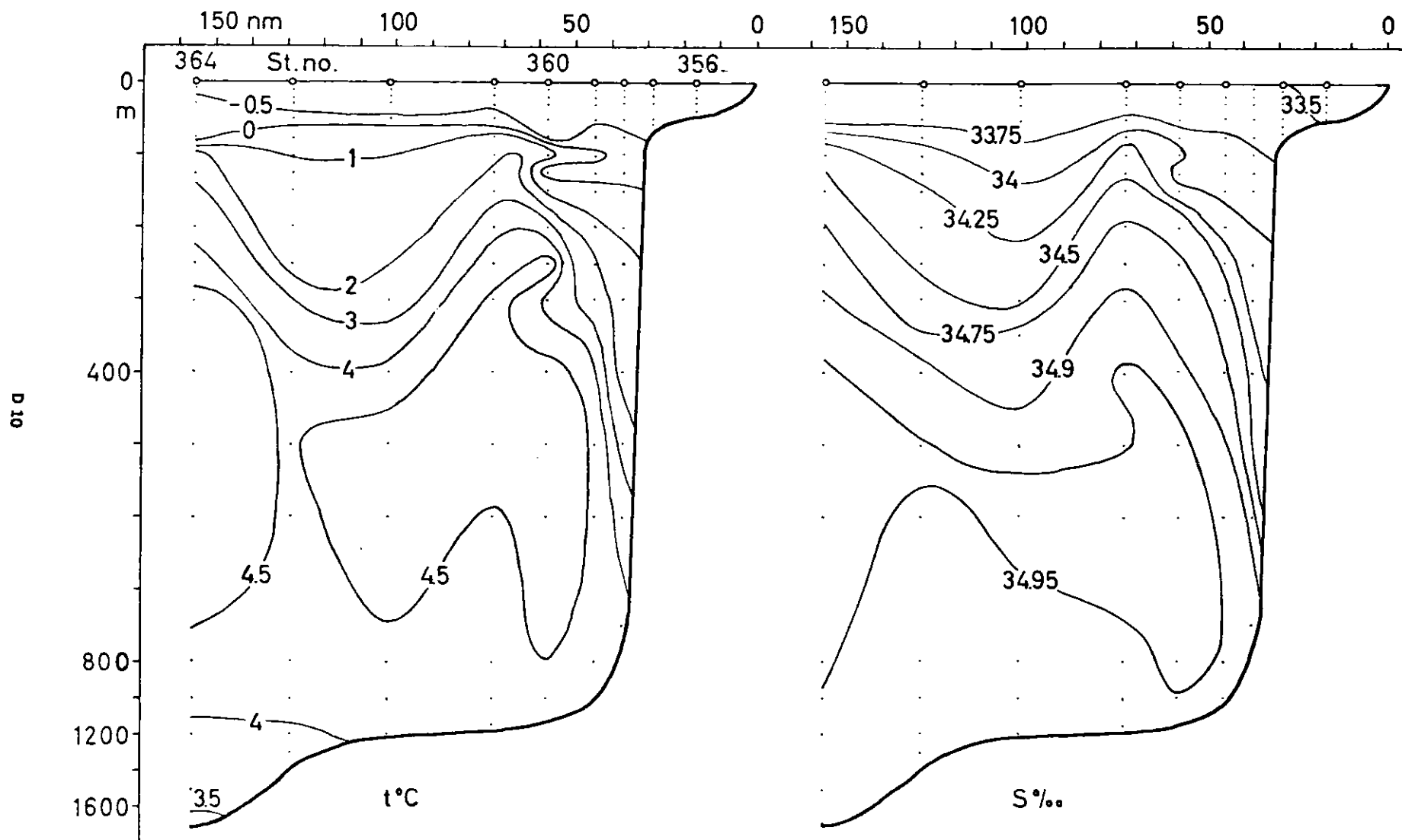


Fig. 8. R/V *Johan Hjort*, West Greenland, 30 April 1968. Hydrographical section across Fylla Bank.

