

ANNUAL MEETING - JUNE 1964

Danish Research Report, 1963A. Status of the fisheries

Fig. 1 shows the output of the cod fishery carried out by Greenland fishermen during the years 1926-63. Since the middle of the fifties the increase has been very quick until it reached its maximum in 1962 with 36,3 thousand tons. In 1963 the catch dropped to 23,3, which is the lowest in the last six years.

The pound net fishery which is a very important fishery in May and June failed totally. This fishery depends on the cod which comes to the shore pursuing the spawning shoals of capelin. The capelin came but not followed by cod. Also later in the season the cod failed to come to the inshore waters, where the Greenland fishermen have their fishing grounds. The reasons for this unusual behaviour of the cod in 1963 are difficult to explain. Perhaps it must be ascribed to unfavourable meteorological conditions. The temperatures in the winter months were unusually high followed by very low temperatures and heavy storms in the spring. This weather conditions have possibly been an obstacle to the stabilization of the water layers which is important for the plankton production and again for the food organisms on which the cod depend.

It was observed that the plankton was very poor in 1963.

Forecast for 1964. It appears from the weather reports that the meteorological conditions in the winter and spring months in 1964 have been rather similar to those prevailing in the same season in 1963. The output of the Greenlanders' cod fishery has been very poor in the first four months of 1964 laying on about the half amount of the landings in the same period in 1963. It is therefore reasonable to believe that the total landings in 1964 will be on about the same level as in the year before perhaps even lower.

Taking the composition of year-classes in the stock of cod in 1963 into consideration the year-class 1957 will still be the most important in the landings in 1964. The cod belonging to this year-class will have a mean length of 72 - 78 cm and a mean weight of 3.5 - 4.5 kg. The year-class 1956 will be of some importance in Division 1 F (mean length and weight about 80 cm, 4.8 kg). We can expect a rather strong reduction in the amounts of these two year-classes caused by heavy trawl fishing.

The year-class 1958 will be of some importance but possibly only in the southern part of Division D and in E.

In the stock of small cod in inshore waters in 1962 and 1963 the year-classes 1960 and 1961 were rather strongly represented and must be considered as rather rich year-classes which will be of importance to the fishery in the future. In the commercial catches in 1964 these two year-classes and especially the year-class 1960 will appear in rather large amounts. The mean lengths of cod belonging to the year-class 1960 will be about 45 - 53 cm and the average weight 0.9 - 1.5 kg. In 1965 it will reach commercial size with a mean length about 60 cm and a mean weight on 2 kg.

B. Special Research Studies

I. Hydrographic and plankton

Hydrographic and plankton studies have been carried out by the research vessel "Dana" in the Davis Strait in June and July according to the ICNAF Northwestlant programme. In inshore waters hydrographic studies have been carried out on fixed stations all the year round. Plankton has been collected on the same stations. On one station productivity studies by means of carbon 14 have been continued.

II. Biological Studies of Fish by Species

COD

Occurrence of cod eggs and larvae

In June and July hauls with 2 m stramin net have been taken by "Dana" in the Davis Strait according to the ICNAF Northwestlant programme a special report on this work will be published. Cod larvae were very scarce in the catches on all stations.

Hauls with 1 m stramin net (100-50 m wire out) were taken in Godthåb Fjord and in Ameralik Fjord from medio January to ultimo July. The catches of cod eggs were small like in 1961 and 1962.

The first catches of cod eggs (16 eggs) were taken February 13th near a spawning place in the inner part of the fjord. On the same place about 900 and 700 cod eggs were caught on April 8th and 13th respectively. The largest number of eggs (about 10.500) were caught in the inner part of the Ameralik Fjord south of Godthåb. On all other stations in the fjords

the catches of cod eggs were very small except in a single catch with 1300 eggs. On April 17th hauls with 1 m stramin net were taken on 3 stations on the Fylla Bank section. The depths were 200, 50 and 500 m. Over the eastern slope of the bank only 5 eggs were caught. Over the middle of the bank no eggs were caught while the catch over the western slope of the bank was about 1000 eggs in a haul with 100-50 m wire out and about 800 in a haul with 500 m wire out.

Cod larvae were only caught on one station namely near a spawning place in the inner part of the Godthåb Fjord where 7 cod larvae were caught on July 3rd.

Occurrence of small cod (age-groups I, II and III)

Fishery with fine meshed gears, hand seine and shrimp trawl, have been carried out to study the occurrence of the I, II and III age groups of cod. The I-group (1962 year-class) was only found in two of thirteen catches and must possibly be considered as a poor year-class.

The age-groups II and III (year-classes 1961 and 1960) were well represented in the catches. The year-class 1960 must be considered as a good year-class which will be of importance for the first time to the fishery in 1965. Also the year-class 1961 seems to be a good year-class.

Commercial Stock

Age composition

Otoliths of 5570 cod were collected in Subarea 1 in 1963. The samples were collected from catches taken with different gears (hand line, long line and commercial trawl) by the research vessels "Dana" and "Adolf Jensen" and a Faroese trawler and from Greenland fishermen's landings at different places in West Greenland. The distribution of samples according to divisions was following:

Division	No. of samples	Offshore banks	No. of samples	Inshore waters
1 A	-	-	1	178
1 B	2	300	4	905
1 C	1	297	1	74
1 D	9	1902	3	547
1 E	1	393	3	432
1 F	1	204	4	344
Total	14	3090	16	2480

Offshore banks

The old year-classes 1947, 1950 and 1953 have been without importance to the commercial fisheries in 1963. In all samples they were below 10 % except in two samples from Divisions 1 B and 1 D where 1953 was represented with between 10 and 20 %.

The 1957 year-class predominated with between 30-56 % in 11 of the 14 samples from the banks.

The 1956 year-class was well represented in samples from Divisions 1 D and especially in 1 E and 1 F, where it was the predominating year-class in two samples.

The 1958 year-class was well represented in samples from 1 D, 1 E and 1 F.

The 1959 year-class was sparsely represented in all samples except in a sample from a hand line catch on Store Hellefiske Bank. Cod belonging to this year-class were small cod (mean length on about 50 cm). According to the estimates based upon occurrence of year-classes in the non-commercial stock in 1962 the 1959 year-class must be considered as a poor year-class.

Inshore waters

The old rich year-classes 1947 and 1950 were nearly absent in most of the samples. Only in three samples 1947 was represented with between 10 % and 15 % (1 A, 1 E and 1 F). The 1950 year-class was between 10 % and 12 % in two catches (1 A and 1 F).

The 1953 year-class predominated in long line catches in 1 A with nearly 40 %. In all other samples it was very poorly represented in two long line catches where it amounted to between 10 and 15 % (1 E, 1 F). Like in 1962 the two rich year-classes 1957 and 1956 predominated the catches. The former in Divisions 1 B, 1 C and 1 D the latter in Divisions 1 E and 1 F. In one great sample from 1 B the 1957 year-class was represented with 73.3 % and in two samples from 1 C and 1 D it was about 60 %. The 1956 year-class was represented in samples from 1 E and 1 F with between 30 % and 50 %.

The year-class 1958 was represented in four samples (1 B, 1 C, 1 D and 1 F) with 25-30 % and in 1 E it was predominating in one sample with 46 %.

The 1959 year-class was poorly represented in most samples except in two samples from Divisions 1 B and 1 D where it was represented with 37 % and 27 % respectively. Only four years old the cod belonging to this year-class have been very small and have no value in commercial catches.

In Fig. 2 the summations of samples are given from offshore banks and inshore waters divided in northern and southern areas.

The predominance of the year-class 1957 in both areas on the offshore banks is clearly seen from the figure. It appears also from the figure that the year-class 1956 was rather poor on the northern banks while it was nearly 30 % on the southern banks. In 1962 it was strongly predominating in the southern divisions. There is reason to believe that cod belonging to year-class 1957 have migrated from the northern to the southern banks.

In inshore waters the 1957 year-class predominated in the northern divisions with 45.6 % and in the southern divisions the 1956 year-class predominated with 45.4 %.

Tagging experiments with cod

4616 cod have been tagged in 1963. The distribution of the taggings on banks and inshore waters, on divisions and on adults and small cod are given in the table below (small cod in brackets):

Division	Offshore banks	Inshore waters	
1 A	-	-	(215)
1 B	236	-	(170)
1 C	719	-	(406)
1 D	847	86	(683)
1 E	182	182	(366)
1 F	-	524	-
Total	1984	792	(1840)

Redfish

Redfish are only of slight importance to the Greenlanders' fishery. The production of frozen redfish filets was only 31 tons in 1963.

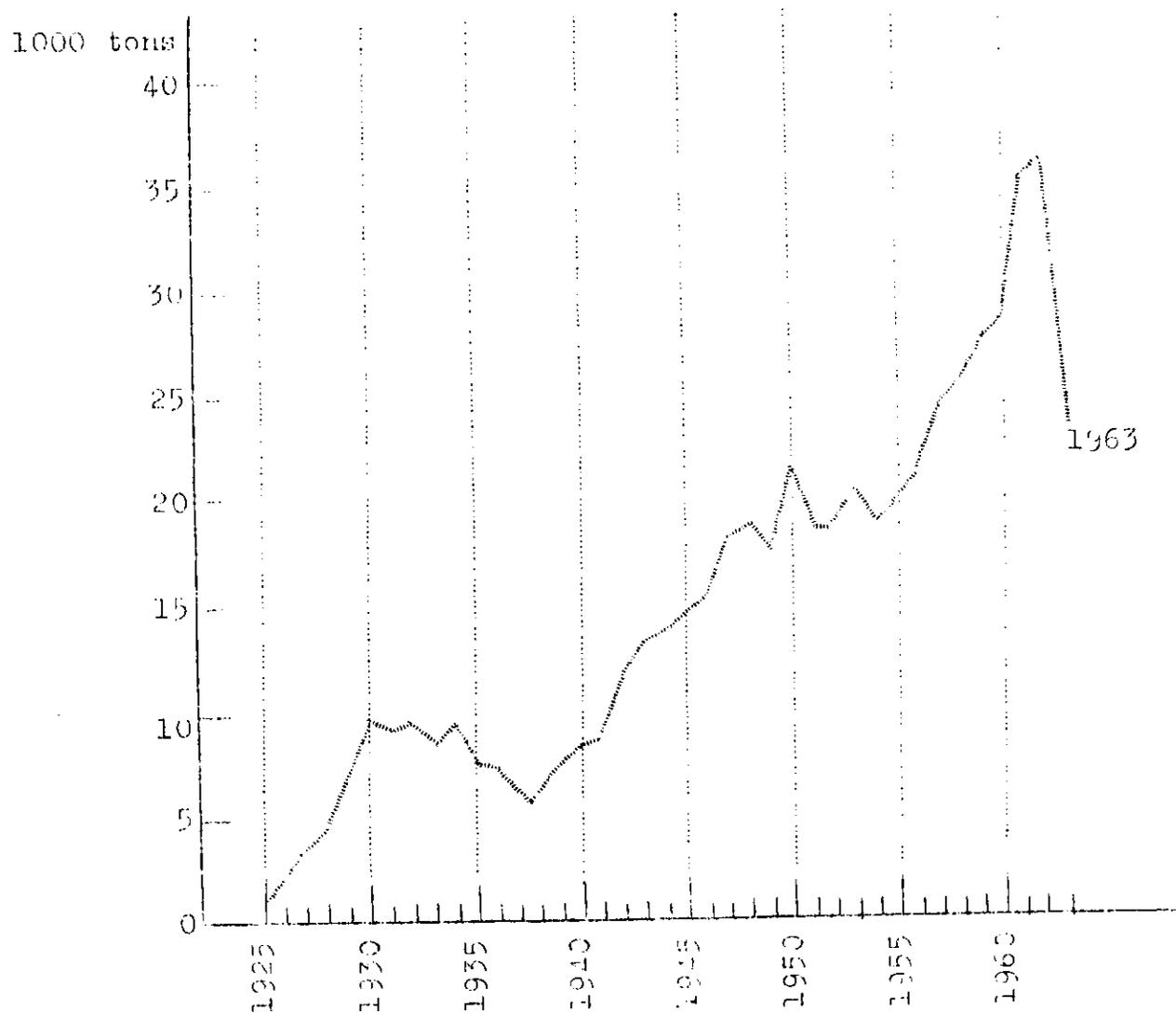
Growth studies

In the Godthåb Fjord fishing with shrimp trawl for small redfish was carried out several times during the whole year. All fish caught were measured (3816 redfish). These experiments have been carried out since 1952 and have given good informations about the growth of the age-groups from 1 to about 10 years old.

Tagging experiments with redfish caught in pound nets in the Godthåb Fjord have been continued. A number of 743 redfish has been tagged.

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Fig. 1. Landings of Cod in West Greenland 1926 - 1963.



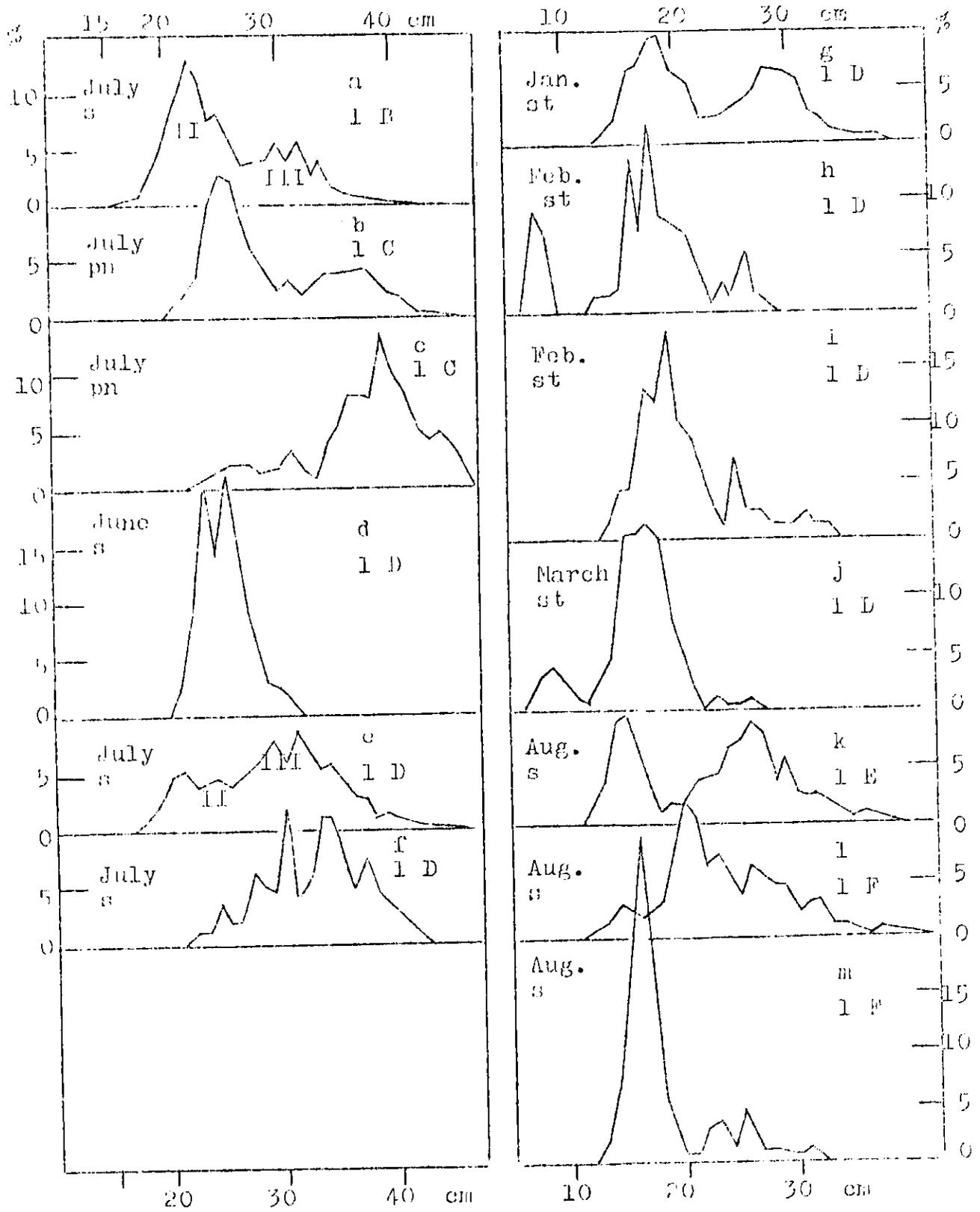


Fig. 2. length frequencies of small cod, age-groups I, II, III.
s = seine, pn = pound net, st = shrimp trawl.

Fig. 3. Age composition of Cod, West Greenland, 1963.

