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Summary of Research and Status of the Fisheries in Subarea 2 during 1965

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Research reports were submitted by all panel members, i.e. Canada, France, Germany, Poland, Portugal, Spain, USSR and UK.

1. Status of the Fisheries

Total catch increased from 251,000 tons in 1964 to 376,000 tons in 1965. The previous high was 297,000 tons in 1961. Most countries made increased catches in 1965. Canada took 27,000 tons (16,000 in 1964), France 26,000 tons (37,000 in 1964), Germany 43,000 tons (9,000 in 1964), Iceland 610 tons (471 in 1964), Poland 23,000 tons (7,000 in 1964), Portugal 73,000 tons (41,000 in 1964), Spain 59,000 tons (45,000 in 1964), USSR 67,000 tons (69,000 in 1964), UK 11,000 tons (2,000 in 1964) and non-members 46,000 tons (23,000 in 1964).

Virtually all the increase was due to increased catches of cod, from 213,000 tons in 1964 to 332,000 tons in 1965. Redfish landings declined from 27,000 tons in 1964 to 24,000 tons in 1965. Most fishing occurred in Div.2J. Total catches of all species in this Div. increased from 251,000 tons in 1964 to 376,000 tons in 1965. Catches in Div.2G and 2H combined increased to 53,000 tons from 10,000 tons.

2. Work Carried Out

(a) Canada: R/Vs *A.T.Cameron*, *Marinus* and *Calanus*. Research from laboratories in St. John's, Newfoundland, and Montreal. Size and age composition from inshore cod fishery. Hydrographic section from Seal Islands across Hamilton Inlet Bank. Coastal plankton collections and hydrographic stations. (Res.Doc.66/30).

(b) France: Fishing trials with pelagic trawls from *Ville de Fecamp*. (Res. Doc.66/32).

(c) Germany: R/Vs *Walther Herwig*, *Anton Dohrn* and *Kap Farvel*. Hydrographic observations from Baffin Island to Div.2J. Size and age composition of cod and redfish. (Res.Doc.66/33a and b).

(d) Portugal and Spain: Commercial trawlers. Cod size and age composition, growth and maturity. (Res.Doc.66/37 and 66/38).

(e) USSR: R/Vs *Sevastopol* and *Topseda*. Hydrographic and plankton studies. Cod size and age composition and tagging. Surveys for young cod. (Res.Doc.66/39).

(f) UK: Sampling commercial landings of cod. Plankton surveys with continuous plankton recorder.(Res.Doc.66/40).

(g) Non-member: Research vessel cruise. Cod and redfish size and age composition. Cod tagging. Serial No.1688.

3. Hydrography

Canada occupied a hydrographic section in August extending from Seal Islands across the southern part of Hamilton Inlet Bank. Temperatures in the upper layers were generally higher than in 1964 and above the average for recent years. There was a much smaller volume than usual of water with temperatures below 0°C. Salinities over the shallower parts of the section were higher than in the previous 2 years. Studies by USSR revealed that water temperatures during the winter of 1964-65 were below average for previous years and cold waters extended further south. However, in summer and autumn the Baffin and Labrador Currents became weaker, and this plus solar warming caused temperatures in shallow depths to be higher than in 1964. In December 1965-January 1966 higher temperatures than in

previous years were also experienced in the deeper layers. This was attributed to lesser transport of warm water of the North Atlantic drift to Northern Europe, with compensatory decrease in the flow from East Greenland and the eastern Canadian Arctic. Results of hydrographic observations by Germany for sections extending from Cape Chidley to Fiskenaes Bank and from southern Baffin Island to Store Hellefiske Bank are described in Res.Doc.66/33a. Other hydrographic observations by Germany are being prepared for separate publication.

4. Plankton

Canada made a small number of coastal plankton collections. USSR continued observations on quantity and species composition of plankton in the subarea. UK reported continuation of the Continuous Plankton Recorder Survey, covering almost 3,500 miles in Subarea 2.

5. Cod

Canada continued sampling for age and length composition from the inshore cod fishery. Research information bearing on otolith age validation (Res.Doc.66/22), growth (Res.Doc.66/24), mortality (Res.Doc.66/26), and changes in inshore catch and effort (Res.Doc.66/23) was summarized to 1964. Increased growth of those age groups taken by the fishery and decreased catch per man inshore appear to be related to the large increase in offshore effort and catch since 1959. Age distributions from research vessel catches in spring of 1963 and 1964 indicated increased mortality in Div.2J from the period of low fishing in 1950-58. A preliminary estimate of natural mortality was of the order of 0.2 (18% annually).

Results of surveys for young cod were summarized by USSR. It appears that there is a southward drift of eggs and larvae from spawning grounds in Subarea 2. Surveys were sometimes incomplete because of ice conditions but indicate only slight year-class fluctuations since 1961. Progressive increase in average size of young cod from south to north is attributed to gradual northward movement as the young cod increase in size. Fishing trials off Baffin Island by Germany resulted in small catches of I-group cod. These may have drifted from West Greenland.

Large scale tagging of cod was carried out by USSR, mainly on the spawning concentrations in Div.2J. Returns to date from tagging experiments since 1961 have been mainly from the Canadian summer inshore fishery along the Labrador and Newfoundland coasts. More than 1,400 cod were also tagged in Div.2J by a non-member. A small sample was tagged by Germany.

Yields of cod with pelagic trawls fished by France in March were 20% better than yields in the same fishing areas with bottom trawls. The cod catch per hour in 21 trials averaged 2.6 tons and on one occasion exceeded 5 tons.

Sampling of the offshore fishery for size and age distributions was conducted by Germany, Portugal, Spain, USSR, UK and a non-member. Results by Germany will be presented at the 1967 Annual Meeting. Information so far available indicates that the 1957 year-class dominated commercial catches, followed by year-classes of 1956, 1958 and 1959. The pattern in the inshore Canadian fishery was essentially the same, and both inshore and offshore was similar to 1964.

6. Other Species

Redfish were sampled for size and age by Germany and a non-member. Of 300 specimens taken south of Hawke Channel in May, 290 were spawning and post-spawning females, mainly 41-47 cm in length. From June to August surveys revealed infestation of the flesh by parasites (Sphyrion and nematodes) at proportions up to 30%. Serological data on redfish in Subarea 2, collected by USSR in 1964, will be submitted at the 1967 or 1968 Annual Meeting. Germany reported that Greenland halibut were taken in small quantities off Baffin Island. *Coryphaenoides rapestris* (round-nosed grenadier) occurred in quantities up to 3.5 tons per hour in depths exceeding 600 m.