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ANNUAL MEETING - 1964

Summary Report
on scientific researches and status of the fisheries
in Subarea 2 in 1963

by Dr. A. S. Bogdanov

Report on researches and status of the fisheries in 1963 were submitted by the following member countries: Canada, Germany, Poland, Portugal, USSR and U.K.

1. Work carried out

a) Canada:

Research work was carried out by laboratories in St. John's, St. Andrews, Dartmouth, Montreal and Quebec as well as aboard the 8 research vessels. Sampling of cod, redfish and American plaice for age and length composition and distribution studies. Study of hydrographic conditions. Researches on the selectivity of cod trawling fishery on Hamilton Inlet Bank.

b) Germany

No special research work conducted.

c) Poland

Study of length and age composition, maturity, and feeding of cod; catches at different times of day. Distribution of redfish by depth. Samples taken from the large-size fishing trawlers' catches.

d) Portugal

Study of cod sampled aboard commercial fishing vessels; age and length determination, sex composition of the day and night catches; sexual maturity and in particular age of maturity; girth, length and weight measurements.

e) USSR

Research and fish-scouting vessels as well as laboratories of the Polar research institute of marine fisheries and oceanography (PINRO, Murmansk) conducted hydrographic investigations. Study of spawning cod and redfish, distribution and age composition of young cod as well as of commercial size cod and redfish.

f) U.K.

No special research work conducted.

2. Hydrography

The Canadian hydrographic sections on August 5-6, 1963 off Seal Islands showed that temperatures at all depths in the colder part of the Labrador current from Hamilton Inlet Bank to shore were quite similar to those of 1962. In the warmer part of the Labrador Current in the deeper water seaward of Hamilton Inlet Bank temperatures were slightly higher than usual.

Hydrological investigations of USSR showed that the flow cold polar waters to the area off Labrador and Newfoundland increased considerably in 1963 in comparison with 1962.

During the spring of 1963 the average temperature of the 0-200 m water layer at standard stations was about 1-2° C lower than in 1962. In 1963 off Labrador and Newfoundland the amount of ice was greater than in 1962, and this created unfavourable conditions for fishing.

3. Plankton

It is to be noted that the United Kingdom is continuing the most interesting plankton recorder survey program.

4. Cod

In the period April to early May, the Canadian R.V. A.T. CAMERON worked on the eastern slope and south-eastern slopes of Hamilton Inlet Bank. On April 9-12 on the south-eastern slope of this bank the greatest cod concentrations were found at 275 and 2.6°C and on the northern part of the eastern slope the largest catch was at 250 m and 1.8°C.

Sets in shallower water (175-190m) and at lower temperatures (-0.1 to 1.6°C) on the eastern edge of the bank produced only a few small cod. Sets in deeper water in the western part of Hawke Channel at low temperatures (0.6 to 1.8°C) also produced few cod.

On May 2-3, 1963, very large catches of post-spawning cod were obtained on the south-eastern slope of the bank just south of the ice at 225-280 m (2.8 to 3.0°C).

In September moderately large cod concentrations were found in 290 m on the south-west edge of Hamilton Inlet Bank, and again in October at 135-175 m.

On all survey lines cod sizes and the percentages of mature cod, and in the areas of concentration the percentage of females among the mature cod, usually increased with depth and increasing temperatures.

Cod were tagged in the inshore shallow-water area in August at Domino (770), Cape Harrison (1150), Hopedale (380) and Main (770). Coastal tagging in 1962 has shown that the spawning concentrations on the eastern and south-eastern slopes of Hamilton Inlet Bank in winter and spring receive contributions from inshore cod not only from Labrador but also from along the east coast of Newfoundland from St. Anthony to at least the Baccalieu area on the northern fringe of the Grand Bank.

In a contribution "Trends in the Cod Fishery off the East Coast of Newfoundland and Labrador" by V. M. Hodder (Document No. 76) it is indicated that the greatest increase in landings has taken place in Subarea 2J in 1960 and 1961 (265,000 tons in 1961 as compared with 60,000 in 1959). In that division there was a reduction of average size of cod in catches from 57.5 cm in 1956-1958 to 56.3 cm in 1960-1961 and of average age from 9.4 to 8.5 years old accordingly. It is also shown that the average catch per hour of trawling has declined from about 1.6 tons per hour in 1954-56 to 1.2 tons per hour in 1961.

The results of Polish investigations showed that in 1963 winter time landings in Subarea 2J (Sundall Bank) were high and equalled at an average to 5.4 tons per hour. Night catches were especially great and reached 9.2 tons per hour. The cod of 1957 year-class (6 years old), 1956 year-class (7 years old), and 1958 year-class (5 years old) in given order dominated the catches taken on Sundall Bank. Size of cod varied from 42 to 62 cm.

Portuguese researches indicated that in May and September the average size of cod varied from 51.9 to 56.4 cm. The 1956 year-class dominated the catches taken in May, and in those taken in September the 1957 year-class predominated. Some useful data was also obtained on the relations between length, weight and girth.

At the middle of March the USSR research vessels found concentrations of cod in Subarea 2 at the depth of 280-350 m and near-bottom temperature 2.0-3.5°C. Spawning took place from the middle of March and lasted until the end of April. Tagging results showed that spent cod are migrating southwards and it seems that main spawning grounds of Labrador cod are situated off Northern Labrador. In 1963 sampling of young cod was continued for age and length distribution.

In the USSR Subarea 2 catches, 6 to 10 year old cod 45-56 cm) predominated.

During those short periods when ice conditions enabled fishing operations to proceed, catch per hour trawling was:-
- February 5.6 tons, March - 3.3 tons, in April - 3.7 tons, and May - 3.7 tons; this reflects the good condition of the cod stock.

5. Redfish

Canadian work on redfish was carried out by the A.T. CAMERON which fished on the northern seaward slope of Hawke Channel from 230 to 730 m on April 9-11 and September 13-14. The April catches of mentella (per half-hour tow) at 365, 460, 550, 640 and 730 m were 15, 1020, 860, 580 and 35 kg at bottom temperatures 2.6, 3.4, 3.4, 3.3 and 3.4°C and average weights of 1.0, 0.8, 0.5, 0.8 and 1.1 kg respectively. Catches of marinus were 480 kg at 460 m and 15 kg at 550 m with average weights of 2.8 and 4.9 kg.

As a contrast in the same area on September 13-14 significant catches of mentella were made from 310 to 620 m with the largest catches, 500 and 980 kg (average weights of 0.5 and 0.7 kg), being made at 310 and 540 m at 3.6 and 3.9°C. Also at this time the only marinus catch over 14 kg was one of 840 kg with an average weight 1.5 kg at 230 m and 2.4°C and only 1 marinus was caught below 310 m.

The marinus concentrated at the 460 m level in April were 87% females (83% pregnant females). The males were probably shallower, possibly near 410 m. Thus marinus were about 180-230 m deeper and mentella at least 90-140 m deeper in April than in September. All but insignificant catches of all redfish in this area were obtained in a 180 m range between 460 and 640 m in April whereas they ranged from 230 to 620 m in September. Thus the redfish in winter-spring and presumably winter are concentrated more than in summer-autumn and this concentration is likely to be most advantageous to fishing in an area with populations both of marinus and mentella which overlap in the winter-spring distribution but tend to become separated in summer-autumn.

In June 1963 the Soviet research vessels did not succeed in scouting commercial concentrations of redfish in Subarea 2H. In April-May in Subarea 2J extrusion of larvae was observed. Males dominated in catches taken in this Subarea at a depth of 500-600 m in May-June. In July a concentration consisting by 90% of spawning females was observed at a depth of 210-540 m.

6. Other Fishes

a) American plaice

A.T.CAMERON made sets in April on the south-eastern slope of Hamilton Inlet Bank of which the only 2 significant catches of American plaice (per half-hour set) were 180 kg at 320 m and 2.6°C and 140 kg at 640 and 3.3°C. The April catch at the greatest depth was well below the cod concentrations while in summer and early autumn plaice and cod on this bank are likely to be found at approximately the same depths with the plaice slightly shallower than the cod.

b) Witch flounder

In 550 and 640 m at the mouth of Hawke Channel a concentration of large witch flounder (1180 and 680 kg per half-hour tow) was found; these fish averaged about 1.4 kg. The mature witch females had small opaque eggs and would not spawn for about 2 months.

7. Status of the Fisheries

Commercial fishing was carried out by the following countries in 1963: Canada, France, Germany, Poland, Portugal, Spain, USSR, UK and Japan.

The preliminary figures for landings show that the total landings for all countries in Subarea 2 were equal to 223,000 tons. This represents a decrease of 43,000 tons from 1962 when the total catch amounted to 266,000 tons.

A very large part (over 95%) of the landings from the area are cod and the landings of the species declined from 255,000 tons in 1962 to 216,000 tons in 1963. Almost all the decrease in landings can be attributed to a lessened activity of the USSR fleet in the area and this is reflected in the decreased landings by the country (60,000 tons in 1962 to 21,000 tons in 1963) while the landings of most of the other countries with large landings from the area have remained relatively constant.



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Note: For p. 4 please make the following correction:-

Para. 6(a) American plaice, line 5, for "well below" read "considerably deeper than"