INTERNATIONAL COMMISSION FOR THE NORTHWEST ATLANTIC FISHERIES

Serial No. 1029 Document No. 85.

ANNUAL MEETING-JUNE, 1962.

SCIENTIFIC ADVISERS TO PANEL 5

CHAIRMAN'S REPORT

The following documents are pertinent to Subarea 5:

12 United States Research Report, 1961.

18 Report of the Meeting of Sea Scallop investigation at Woods Hole, Mass., on February 13-15, 1962.

20 Canadian Research Report, 1961. Part B. Subareas 4 and 5 Biology.

21 Ibid. Part C. Subareas 4 and 5, Oceanography.

26 10 % Annual Exemption

31 Continuous plankton records.

48 USSR Research Report, 1961.

56 Offshore Scallop Research.

57 Hydrography - Canada.

67 Morphological and Biological Characteristics of Nova Scotia Shelf Herring (Banquereau and Georges Bank).

73 Maximum yield per recruit of sea scallops.

LANDINGS IN 1961 COMPARED WITH 1960. (in metric tons)

1960	Cod	Haddock	Redfish	Flounder	Other Gdf.
Canada	145	390	4	1	2,222
U.S.A.	13,839	45,325	11,373	27,021	79,200
	13,984	45,715	11,373	27,022	81,422

	Herring	Scallops	Others	Total
Canada	0	27,000	1,000	31,152
U.S.A.	61,000	83,000	22,000	343,000
	61,000	85,700	23,000	374,152

1961	God	Haddock	Redfish	Flounder	Other Gdf
Canada	242	189	25	2	386
Norway	-	-	-	-	-
USSR	55	-	11	3	6[1)]
USA	17,214	51,647	14,040	29,050	77,000
	17.511	51,836	14,076	29,055	77,392
Canada	0	37,891	1,000	39,735	
Norway	-	-	140	140	
USSR	68,000	-	-	68,075	
USA	22,000	88,795	20,000	320,097	
	90,000	126,686	21,140	428,097	

1) Halibut

As soon as ageing techniques are perfected, a program of age reading will be initiated in order to obtain age compositions of the landings.

Cod

Total U. S. cod landings in 1961 reached a 10-year high of nearly 44 million pounds and most of this came from Subarea 5. Growth studies consisted of intensive examinations of cod otoliths by the U.S.

HADDOCK Landings of haddock from Georges Bank in 1961 were the highest since 1957 (Doc.12). The major part of this increase is due to the strong 1958 year class occurring as a 3-year-old fish but the 1959 year class was not small, being twice as large as the 1956 and 1957 year classes although only one-half as large as the 1958 year class.

The fall haddock survey indicated the 1961 year class to be one of the poorest observed on survey cruises. Special studies were made of relation of C-age group haddock to depth and temperature. This age group consistently occurred in depths between 50 and 100 fthoms and at temperatures below 45 F. be made by appropriate stratification of grounds for survey purposes.

POLLOCK

Canadian biologists continued their study of the biology of Pollock at the mouth of the Bay of Fundy (Doc.20). Returns from 991 medium and large pollock (60-85 cm) show a southern migration in autumn to the winter spawning area of the southern Gulf of Maine (5 Z).

The summer distribution ofpollock at the mouth of the Bay of Fundy was surveyed at sea and by sampling commercial landings. Most pollock caught by otter trawl were above sizes released by 4½ inch manila meshes.

SILVER HAKE

The Silver Hake fishery declined in 1961 due apparently to lowered availability and abundance. Studies of commercial samples and research surveys show a marked seasonal and secular change in availability on different grounds.

REDFISH

Landings of redfish from the Gulf of Maine were somewhat higher in 1961 than in 1960

Studies of the Eastport stock were continued by the U.S. Petersen disc tags curtail growth for 2½ years after which time growth gradually increases until 4½ years after tagging when it returns to normal. Recent studies with plastic dart spaghetti tags

tags through the dorsum indicate that tagging in this manner has little effect on growth rate.

YELLOWTAIL FLOUNDER

Relative abundance of this species on the two fishing grounds: Southern New England and Georges Bank has increased in recent years. Strong year-classes in 1955, 1956, and 1958 have been responsible for these increases. Total U.S. catch in 1961 approximately 37 million pounds, higest since 1948. The 1959 year class appears to be of about average size but the 1962 catch is expected to consist primarily of the 1958 year class and will remain high. Research has concentrated on the study of growth and on age compositions.

FLUKE

Research conducted by the U.S. consisted of (1) spawning studies, (2) abundance and distribution of 0-age group, (3) stock identification, and (4) preliminary age and growth studies.

Information so far collected suggests that spawning takes place in the fall during migration from the summer inshore grounds to the winter offshore grounds. Chesapeake Bay appears to be an important nursery ground. About 1800 fluke have been tagged to identify exploited groups. Scales appear to be useful for age determination.

SEA SCALLOPS

The high abundance of sea scallops characteristic of t the last two years continued during 1961. U.S. landings reached a record of 23.6 million pounds of meats while Canadian landings increased to 10.0 million.

Both Canada and the U.S. conducted research on the question of possible ring size regulation, each country conducting one research curise for this purpose. Canadian and U.S. biologists met twice during the year to compare results and analyse data. Their conclusions are presented in Docs. 18, 56, and 73. A further examination of the sea scallop problem as it relates to management measures was made by the sub-committee on sea scallops at this annual meeting. The report of this body is given in Proceedings No.(1) Draft.

Study of growth rates and mortality rates have resulted in estimation of yield per recruit in relation to age selectivity of the fishery. The calculations indicate that delaying age of shucking by one year of life would increase the yeild per recruit in the order of 10 to 20 per cent. The analysis of selection data thus far has not allowed us to predict a precise relationship between age of capture and ring size. It appears, however, that to increase the age of shucking by one year would require a ring size of considerably more than 4 inches.

Canadian and U. S. biologists plan to confer during the year to make further analyses of selective data and to plan additional experiments on gear selection. In these experiments attention will be paid to the necessity for increasing wire gauge in the larger rings.

Canada conducted research on the culture of sea scallop larvae and were successful in rearing them for 42 days but the did not settle in this time (Doc.20). The U.S. carried out tank experiments on the effect of tags on movement of adults (Doc.12).Both tagged and untagged showed little movement in cold water and both showed some movement toward the light in water of higher temperature.

HERRING

Canada, USSR, and U.S.A. carried out researches on herring in Subarea 5 during 1961. The USSR describe their activities in Docs. 48 and 67 on the basis of morphological and biological characteristics. The USSR concluded that the Georges Bank population is an isolated stock and does not perform long migrations. Canada and the U. S. conducted researches on various stocks in the Gulf of Maine, on Georges Bank and in areas to the southwest, studying morphology, blood groups, age compositions, growth rates, and relation of larval drift to hydrography. These studies are aimed at differentiating the various stocks in the general area of Subarea 5, adjacent areas of Subarea 4 and extra-convention areas to the south.

ENVIRONMENTAL STUDIES

Oceanographic researches carried out by Canada in Subareas 4 and 5 are described in Document 21. The circulation and bottom currents was studied in the Gulf of Maine, Bay of Fundy area by means of drift bottles, sea bed drifters, and other mechanical devices. The various phases of the circulation studies have been undertaken to gain a better knowledge of the tidal streams and non-tidal drift and their effects on the environment.

The oceanographic Laboratory at Edinburgh extended its Hardy Recorder program to include a run to Boston, Mass. Instruments have been installed on the R.M.S. Newfoundland of the Furness Withy Line. The Woods Hole Laboratory of the Bureau of Commerical Fisheries has co-operated to thee extent of servicing the Recorder in Boston. As a result of this program six runs were made across the Gulf of Maine. Some preliminary results are presented in Doc. 31 by R.S. Glover. Redfish larvae were found in July and August in the Gulf of Maine. Total copepods were most abundant there in July and August and least abundant in December. Certain species of copepods showed a marked seasonal variation in abundance.

The USSR conducted three oceanographic surveys in Subarea 5 in 1961. A description of the water masses on Georges Bank and the effect of wind direction on these masses is described in Doc. No.48 by Pechevik & Noskov.

Northeastern winds increase the flow of the slope water along the continental slope and may lead to a complete destruction of the anticyclonic eddy on the bank. Southwestern winds increase the penetration of Atlantic water masses of high salinity into the bank area.

The U. S. continued its operation of 13 lightship stations located from Maine to Georgia where daily observations of temperature and salinity are made and these observations have been supplemented by observations from several shore stations and Texas Towers 2 and 3. Many lightships also released drift bottles (Doc.12). The analysis of these data have not been completed.

The U.S. conducted six cruises in Subarea 5 during the year on which temperature observations were made from surface to bottom. Analysis of these data is underway.

BENTHIC STUDIES

Studies of bottom sediments, microscopic benthic invertebrates, and food habits of groundfish in Subarea 5 by the U.S. was continued and is reported in Doc.12.

Silt clay, sand, and gravel bottoms are distributed throughout the Gulf in a complex way and are not necessarily related to depth of water or distance from land as might be expected. New studies of haddock feeding indicate that they may be somewhat selective in their feeding habits preferring crustaceans and to some extent echinoderms over molluscs, annelids and miscellaneous group of bottom organisms.