INTERNATIONAL COMMISSION FOR THE NORTHWEST ATLANTIC FISHERIES

Serial No. 723 (H. Var.)

Document No. 6

ANNUAL MEETING - MAY-JUNE 1960

Annotated List of Papers Relating to Fisheries Research in the ICNAF Area.

by Erik M. Poulsen

Item 4 of the Report of the Ad hoc Subcommittee on Publications, App. XII to the Report of the Standing Committee on Research and Statistics, Annual Meeting, 1959, reads:

> "With the aid of the FAO bibliographic service and assistance from member countries, the Secretariat shall compile each year a list of all papers relating to Fisheries Research undertaken in the ICNAF area, for review at the next Annual Meeting concerning publication in the "Red Book". In addition to the references, this list shall also include brief abstracts, as provided by FAO unless the authors concerned wish to provide their own brief abstracts for this purpose. "

Following this request the attached list of papers has been prepared by the Secretariat.

Papers published by ICNAF or circulated for ICNAF meetings are not included. The present list includes papers which have been published in the calender year 1959; a few papers from 1958, but not considered in the 1958 list, are included.

In preparing the list the FAO "Current Bibliography" have been consulted, and use has been made of papers forwarded to the Secretariat by the member countries. A provisional list was circulated to member countries, and a number of these have returned the list with their amendments (incorporated in this final list).

Abstracts marked (FAO) are from the FAO "Current Bibliography"; those not marked are prepared in the institutions from which the papers are issued. In some cases when abstracts from FAO or from the institutions were not available, a brief abstract was prepared in the Secretariat, marked (Secr.).

The Standing Committee on Research and Statistics is requested to consider the need for a further circulation of this list (in the "Red Book" or in the "Annual Proceedings"), and to review the list.

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I. HYDROGRAPHY

Adrov, M.M. 1959. Hydrological regime in the eastern part of the Danish Strait in spring 1955. (Russian). Trans. of the Polar Institute; vol. XI. Moscow.

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Describes temperature and salinity (also oxygen and phosphate) conditions in the sea between East Greenland and West Iceland in March-April 1955. (Secr.)

Alekseyev,A.P. 1959. Polar front in the Norwegian and Greenland Seas. (Russian). Trans. of the Polar Institute; vol. XI. Moscow.

Describes (with tables, maps and sections) temperature and salinity conditions in the N. Atlantic between Greenland, Iceland and Spitsbergen. (Secr.).

Bumpus, Dean F. 1959. Investigations of climate and oceanographic factors influencing the environment of fish. Woods Hole Oceanographic Institution, unpublished ms. No. 59-2, 7 pp. Hydrography of Gulf of Maine and Georges Bank.

Böhnecke, G.
Bückmann, A. 1959. Die Expeditionen von F.F.S. "Anton Dohrn" und V.F.S. "Gauss" im Intern. Geoph. Jahr 1957/58. Dtsch. Hydr. Zeitschrift. Erg. Reihe B (4°),3 Hamburg. pp.1-107

After a report on the cruises in the N. Atlantic and on the hydrographic sections made follow 17 special papers on the results; of these papers the following three appear to deal especially with the ICNAF area:

Koopman, G. Thermo-haline Schichtung im jahreszeitlichen Wechsel zwischen Kap Farvel und der Flämischen Kappe. (Seasonal changes in the thermo-haline stratification between Kap Farvel and Flemish Cap.

Beck, B.; Kalle,K; E. Rogalla. Die Schichtung im Sauerstoffgehalt im jahreszeitlichen Wechsel zwischen Kap Farvel und der Flämischen Kappe. (Seasonal changes in stratification of oxygen-content between Kap Farvel and Flemish Cap).

Krey, J.; Hantschmann, D.; St. Wellershaus. Der Sestongehalt entlang eines Schnittes von Kap Farvel bis zur Flämischen Kappe im April und September 1958. (Content of seston along a section Kap Farvel-Flemish Cap in April and September 1958).

Campbell, N.J. 1959. An international geophysical year project. Fish. Res. Bd. Canada, Atlantic Prog. Repts., No. 72, 33-36.

As a contribution to the studies of the International Geophysical Year, this Oceanographic Group took part in IGY project known as "Project Deep Water Circulation". The area covered for this project extended from Bermuda to Baffin Bay with oceanographic sections extending seaward from the continent. A preliminary study of the data on the longitudinal section has revealed some rather interesting distributions of properties between subtropical and polar waters.

Day, C. G. 1959. Oceanic observations, 1958, east coast of the United States. Woods Hole Ocean. Inst. U.S. Fish and Wildlife Service; Spec. Sc. Rep. Fish No. 318; pp. 1-119.

Daily water temperature and salinity observations for 1958 from 17 localities along the Atlantic coast are tabulated, plotted and discussed. Ill. by large numbers of sections and tables. (Secr.).

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Fraga, F. 1959. Determinación de nitrógeno orgánico suspendido y disuelto en el agua del Mar. (Determination of organic nitrogen suspended and dissolved in sea-water). Inv. Pesq. XIV, pp. 121-7. Barcelona.

An improvement of the Kjeldahl method for determination of total or dissolved nitrogen in sea-water is described; the interferences by ammonia, nitrites and nitrates have been eliminated. No special device is wanted, and the time used for every determination is two hours, but it is possible to carry out several analyses together. The sample volume used is 100 ml and the mean deviation is ± 0.5 micromoles of nitrogen per liter (± 0.07 mg/l). (Auto-Rev.).

Hermann, F. 1959. Hydrographic conditions in the eastern part of the Labrador Sea and Davis Strait in 1957. ICES; Ann. Biol. Vol. 14, p. 24-6.

Ice conditions in West Greenland waters; temperature- and salinity sections off West Greenland; temperature at fixed station, mouth of Godthaab Fjord through the year. (Secr.).

Hermann, F. 1959. Sections Faroes-East Greenland and Cape Farewell to West Iceland. ICES; Ann. biol. vol. 14 p. 26-7

Temperatures and salinities of sections worked June-August 1957. The thick layer of warm Atlantic water between the Faroes and the Reykjanes Ridge has been increasing since 1951. (Secr.).

Lauzier, L.M. and N. J. Campbell. 1959. Comparison of some oceanographic features in the Labrador Sea and Davis Strait regions, 1928-1935 and 1950-1955. Preprints, International Oceanographic Congress, 1959, pp. 103-104, A.A.A.S., Washington

A study of the July and August water conditions of the upper strata in the Labrador Sea and Davis Strait has been made for two periods, 1928-1935 and 1950-1955. The salinity and temperature observations for both periods of study were averaged by degree squares for three depths: surface, 100 metres and 200 metres. The decreases of temperature and salinity that have taken place in these waters appear to be the result of a number of interrelated phenomena, variations in the intensity of the currents, the distribution of Arctic ice, and atmospheric conditions.

Smed, J. 1959. Monthly anomalies of the surface temperature of the sea west of south Greenland 1876-1956. ICES; Ann. biol. vol. 14, p. 11.

(As per title.)

Takano, K. Sur la circulation océanique. Cah. Oceanogr. Bull. d'Inf. Com. Centr. d'Oceanogr. et d'Etude des Côtes. XI, 9. Paris 1959.

The paper includes a theoretical study of the pattern of water circulation in an ocean. (Secr.).

Young, E. Gordon and D. G. Smith. 1959. The chemical composition of sea water in the vicinity of the Atlantic Provinces of Canada, 16(1): 7-12. J. Fish. Res. Bd. Canada.

Samples of sea water from eight locations at the surface

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around the coast of the Atlantic Provinces of Canada have been analyzed for their content of major and minor chemical constituents. The salt water in the Bras d'Or Lakes of Cape Breton Island, N.S., was different from that in the contiguous Atlantic Ocean and showed evidence of much dilution. The seven other samples examined averaged 17.17 0/00 for chlorinity and 31.03 0/00 for salinity. These averages are low for open oceanic waters. The average composition of sea water for this area was as follows in grams per kilogram: Na, 9.55; K, 0.34; Ca, 0.37; Mg, 1.15; SO_4, 2.36; B as H_3BO_3, 0.0243. Concentrations of the trace elements in micrograms per litre varied within the following limits: As as As_2O_3, 1.4 to 2.0; Co, 0.33 to 0.67; Cu, 13 to 22; F, 860 to 1200; I, 6 to 53; Mo, 6.3 to 14.0; PO_4, 5 to 69; Si, 44 to 95; Zn, 6.5 to 10.9. Nickel was also present in all samples but vanadium was not detected. The various ratios of the mineral elements, especially to chlorine, have been calculated, and show only slight divergence from those for open ocean water.

II. PLANKTON

Bé, A.W.H., M.Ewing and L.W. Linton. 1959. A quantitative multiple opening-and-closing plankton sampler for vertical towing. ICES, J. du Cons. 25(1): 36-46.

Ill. description of apparatus and its method of operation (FAO.)

Brunel, Jules. 1959. De la Diatomée à la Morue - I - Le Phytoplancton. Actualités Marines, vol. 3, no. 3, pp. 5-10.

A summary of phytoplankton as a link in the chain of food for cod.
(Secr.).

Brunel, Pierre. 1959. Le zooplancton de la baie des Chaleurs en 1955: distribution horizontale quantitative et correlations hydroclimatiques. Contribution no. 73, Département des Pêcheries, Quebec, pp. 1-65

Based on vertical hauls with Hensen Net and on hydrographic observations volume and number of individuals of the main zooplankton groups were determined in the Gulf of St. Lawrence, May-Sept. 1955. Largest volumes were found offshore in spring and summer, smaller volumes in fall.

(Secr.).

Cushing, D. H. 1959. On the nature of production in the Sea. Fish. Inv. Ser. II, XXII (6), London.

A model of plankton production in temperate seas is developed and related to data from the North Sea. The balance of nutrients in the water is discussed for algal cultures, lakes and the sea. Production in oceanic waters is then discussed with special reference to the Sargasso Sea.

Cushing, D. H. 1959. The seasonal variation in oceanic production as a problem in population dynamics. J. Cons. Int. Expl. Mer. 455-464.

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A model of plankton production in the central North Sea is described and is considered as a predator-prey process. Seasonal patterns of production in different latitudes are described as functions of this process.

Gillbricht, M. 1959. Die Planktonverteilung in der Irminger See im Juni 1955. (The distribution of Plankton in the Irminger Sea in June 1955). Ber. Dtsch. Wiss. Komm. Meeresforsch. XV, 3 Stuttgart, 1959.

The plankton spring maximum occurs earlier in the coastal regions than in the central part of the Irminger Sea. A parallelism between plankton counts and waterturbidity was established. Plankton is more patchy than turbidity. The proportion between phyto-and zooplankton was investigated. The regional distribution of the various groups of planktons was studied.

Steele, J. H. 1959. The quantitative ecology of marine phytoplankton. Biol. Rev., 34, 129-58.

A description and review of mathematical studies of organic production, with special consideration of the information used to set up the postulates and to test the conclusions; consideration is also given to the information which is ignored.

Yentsch, Charles S. and John H. Ryther. 1959. Relative significance of the net phytoplankton and nanoplankton in the waters of Vineyard Sound. ICES Jour. du Cons. 24(2): 231-238.

Chlorophyll content, photosynthesis and cell numbers compared. Net portion comprised a small percentage of total population.

III. FISHES

A. Cod-Group

Bratberg, E. 1959. Rapport fra tokt med "Johan Hjort" til Vest Grønland april 1959. (Rep. on a cruise with "Johan Hjort" to W. Greenland in April 1959). Fiskets Gang, no. 27.

The paper gives in graphs the temperature on the W. Greenland banks and the length and age of cod caught with lines and trawl. The 1947 year-class of cod is declining, the 1950 is still important, and the 1953 year class is promising.

(Secr.).

Clark, John R. 1959. Sexual maturity of haddock. Trans. Am. Fish. Soc. 88(3): 212-213.

Age and length at maturity for Georges and Browns Bank haddock.

Clark, John R. and Eli L. Dietsch. 1959. Length-weight tables for Northwest Atlantic haddock. ICNAF Sampling Yearbook 2: 25-37.

(Per title).

Cohen, Daniel M. 1959. The scientific name of the common cod. ICES, Jour. du Cons. 25(1):50-52.

Confusion between Gadus morhua and G. callarias has been resolved and G. morhua is only valid name.

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Fritz, Raymond L. 1959. Hake tagging in Europe and the United States, 1931-1958. ICES, Journal du Cons. 24(3): 480-485.

A review of past experiments on Merluccius and a new method.

Hansen, P. M. 1959. Cod fry and small cod in coastal waters and on the offshore Banks of W. Greenland, 1957. ICES; Ann. biol. vol. 14 p. 103-5.

Distribution and frequency of eggs, larvae and young cod. The data indicate a good 1957 year-class.

(Secr.)

Hansen, P. M. 1959, Danish investigations (cod) in the coastal waters and on the offshore banks of W. Greenland in 1957. ICES, Ann. biol. vol. 14, p. 107-14.

The data reported and considered in Danish Research Rep. 1957. ICNAF Ann. Proc. vol. 8. p. 27-42.

Jones, R. 1959. A method of analysis of some tagged haddock return J. Cons. int. Explor. Mer, 25 (1), 57-72.

A mathematical analysis of tagged haddock returns, in which a distinction is made between relatively random movements and the more directional ones obtained at certain seasons.

Jónsson, J. 1959. Greenland stock - Icelandic cod investigations in SW. and SE. Greenland waters, 1957. ICES, Ann. biol. vol. 14 p. 115-8.

Most of the samples considered are collected in E. Greenland waters, a few are from Subarea 1 (Godthaab-Frederikshaab). Data on age, length, age at first maturity, growth and abundance are given.

(Secr.)

Jónsson, J. 1959. On the spawning stocks of cod in East Greenlandic and Icelandic waters in 1959. Aegir, vol. 52 no. 20. Reykjavik. Icelandic text with English summary.

Kohler, A. C. 1959. Growth and parasites of cod during a year in captivity. Fish. Res. Bd. Canada, Prog. Repts. Atlantic Coast Sta., No. 72. pp. 3-7, September 1959.

Cod (Gadus morhua L.) of 29 to 42 cm initial length were kept in tanks for 54 weeks and were fed frozen herring at maximum, intermediate and maintenance rates. Small fish of the group feeding at a maximum rate increased 157% in weight in a year while large ones feeding at this rate increased 98% in weight during the same interval. The conversion factor for weight of food used for growth to weight of cod ranged between 2.1 and 2.4 for cod making intermediate to fast growth.

At the end of the experiment the fish were examined for the presence of larval nematodes (Porrocaecum decipiens Krabbe). An unusually large percentage of those found (33%) were on the skin side of the fillet. This observation together with earlier observations by D. M. Scott indicate that they move from stomach to body cavity, through the musculature to the epidermis.

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McCracken, F. D. 1959. Cod tagging off northern New Brunswick in 1955 and 1956. Fish. Res. Bd. Canada, Prog. Repts. Atlantic Coast Sta., No. 72, pp. 8-19.

The distribution of recaptured tagged cod from tagging in the Gulf of St. Lawrence off northern New Brunswick shows a major migration of cod out of the Gulf in winter. Recaptures in December to May were mainly from along the western side of the Laurentian Channel, off the east coast of Cape Breton. In this area this stock is important to the winter fishery by European vessels along the 100-fathom contour.
Recaptures between June and November come mainly from the tagging region off northern New Brunswick, although some recaptures were scattered throughout the western Gulf. Very few tagged cod were retaken off Newfoundland, across the Laurentian Channel.
Disk tags have produced higher returns than hydrostatic tags and by the end of 1957 about 30% of the 1955 disk-tagged cod had been returned. The somewhat lower returns than for cod tagging in inshore waters off Nova Scotia are consistent with the differences in the fisheries and the age composition of the commercial catches in these different regions.

Marcotte, Alexandre. 1959. Distribution de la Morue dans la baie des Chaleurs en 1958. Actualités Marines, vol..3, no. 1, pp. 3-9.

Monthly patterns of distribution and their relation with temperature (FAO).

Meyer, A. 1959. Greenland stock - German investigations on Greenland cod, 1957. ICES, Ann. biol. vol. 14 p. 118-21.

Describes for the East Greenland and West Greenland regions the German trawl fisheries for cod, and reports age- and length distribution for cod fished from commercial trawlers as well as from the research vessel "Anton Dohrn".

(Secr.)

Meyer, A. 1959. Schwierige, aber erfolgversprechende Fischerei auf Laichkabeljau vor Westgrønland. (Difficult, but promising fishery for spawning cod off W. Greenland). Hansa, Jg. 96, nos. 8/9.

Describes the fishery for spawning cod in Febr-March in the area of Fiskenæs, Fylla and Banana Banks, and reports age- and length distribution of the cod fished. A spawning area is delimited down to a depth of 250 m off the coast between Godthaab and Frederikshaab.

(Secr.)

Miller, David and Robert R. Marak. 1959. The early larval stages of the red hake, Urophycis chuss. Copeia 1959 (3): 248-250.

A radical change in pigmentation between 22 and 38 hours of development has caused confusion in the literature. Figures.

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Rasmussen, B. 1959. Greenland stock. On the migration pattern of the West Greenland stock of cod. ICES, Ann. biol. vol. 14 p. 123-4.

A total of 3263 cod were tagged 1953/57 in the Holsteinsborg deep off West Greenland. Of these 431 or 13.3% have been recaptured. Recaptures made during the same season show a decided northward migration during late summer and autumn. In winter the cod migrate to the southern banks in order to spawn. In the southern localities recently spent fish are recaptured in May and June. Later in summer and autumn recaptures are made further north. The tagging experiments show a seasonal movement of the West Greenland cod stock, with a southward spawning migration to about 62°N. lat. in winter and a northward feeding migration to 68 or 70° N. lat. in summer.

Only 7 specimens migrated to Iceland and one to Newfoundland. The results indicate that the West Greenland area north of 62° is dominated by an almost separate population of cod with a more or less closed migration pattern. Only very few specimens of this true West Greenland stock migrate out of the area. In the opinion of the author there are at least two stocks of cod to be found in West Greenland waters, one with a northern distribution pattern as shown by the tagging results, the other a southern population around the Cape Farewell - Julianehaab region which may partly belong to the Icelandic or perhaps a mixed east Greenland-stock. Further taggings are necessary in the Cape Farewell region and off East Greenland in order to elucidate this latter problem.

Schaefer, R. H. 1959. A study of the growth and feeding habits of the whiting or silver hake, Merluccius bilinearis (Mitchill) of the New York Bight. Thesis, Rutgers Univ.

Age and growth - (FAO)

Scott, D. M. and W. R. Martin. 1959. The incidence of nematodes in the fillets of small cod from Lockeport, Nova Scotia, and the southwestern Gulf of St. Lawrence. J. Fish. Res. Bd. Canada, 16(2): 213-221.

The incidence of nematodes in fillets of Atlantic cod (Gadus callarias) was determined in 1957 in four areas within 10 miles of Lockeport, N. S., and six areas in the southwestern Gulf of St. Lawrence. About 1,500 cod, mostly between 1 and 6 years of age, were examined. All nematodes examined (517) were larvae. About 97% belonged to the genus Porrocaecum; the remainder appeared to belong to the genus Anisakis. In all areas there was a progressive increase in incidence with increasing age of cod. In Gr. IV and V over 70% were infected. Local variation in incidence was observed in the Lockeport region. Cod were more heavily infected in inshore than in offshore waters. The samples from the Gulf of St. Lawrence showed less geographic variation in incidence than the Lockeport samples. The incidence in cod from the Magdalen Islands was noticeably lower than that in cod from the New Brunswick shore. Cod in the Gulf of St. Lawrence were infected to about the same extent as those from the offshore areas near Lockeport. The relation between local variations in incidence and the distribution of seals is briefly discussed.

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Woodhead, A. D. 1959. Variations in the activity of the thyroid gland of the cod, Gadus callarias L.. in relation to its migrations in the Barents Sea - I. Seasonal changes. J. Mar. biol. Ass. U.K., 38:407-15.

A seasonal cycle of activity has been demonstrated in the thyroid gland of both adult and immature cod. It has been suggested that thyroid activity may initiate and sustain the active migration of the cod.

Woodhead, A. D. 1959. Variations in the activity of the thyroid gland of the cod, Gadus callarias L., in relation to its migrations in the Barents Sea. II. The "dummy run" of the immature fish. J. Mar. Biol. Ass. U.K. 38.417-22.

The average length of the immature cod caught between Bear Island and the Norwegian coast in March 1956 increased from north to south and it appeared that the length of the southerly overwintering migration increased as the fish became older. It is suggested that the greater length of migration in larger immature cod is related to continued high level of thyroid activity.

Yergeau, René. 1959. La morue du Bas-Saguenay. Actualités Marines, vol. 3, no. 2, pp. 3-10.

A sample of 1,974 cod fished with hooks, trawl and in traps in 1956 in Bas-Saguenay (Gulf of St. Lawrence) was treated statistically. Mean length and weight were determined, and the relation weight-length was calculated. Conversion factors were calculated for various size groups for gutted, headed fish to round fresh fish.

(Secr.)

B. Flat-Fishes.

Lux, Fred E. 1959. A case of partial albinism in the four-spotted flounder, Hippoglossina oblonga. Copeia 1959 (3): 253.
(per tittle)

Lux, Fred E. 1959. Riddle of the N. E. yellowtail flounder. Maine Coast Fisherman 13(8): 10.

Semi-popular account of tagging and migration.

McCracken, F. D. 1958. On the biology and fisherv of the Canadian Atlantic halibut, Hippoglossus hippoglossus L. J. Fish. Res. Bd. Can., 15:1269-311.

Location of fishing grounds, movements of fish, comparisons of populations, analysis of the fisheries and discussion of prediction of future yields. (FAO).

Rae, B. B. 1959. Halibut - observations on its size at first maturity, sex ratio and length/weight relationship. Mar. Res. Scot. 1959, No. 4, 19 pp.

Observations made on commercial and research catches taken over the North Atlantic, with information on sex ratios, and some consideration of the results in relation to halibut fisheries.

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McIntyre, A. D. 1959. Halibut. Scottish investigations. Ann. Biol. Copenhague, 14(1957), 31-33.

Biological statistics of halibut caught by F.R.V. "Explorer" in 1957 during two trips to Faroese waters and three trips to Icelandic waters.

Ronald, Keith. 1959. A check list of the Metazoan Parasites of the Heterosomata. Contribution No. 67, Department of Fisheries, Quebec, pp. 1-152.

C. Redfish

Hansen, P.M. 1959. Danish catches of redfish (Sebastes marinus) in West Greenland fjords. ICES; Ann. biol. vol. 14, p. 39.

Measurements of small redfish.

(Secr.)

Kelly, George F. and Robert S. Wolf. 1959. Age and growth of the redfish (Sebastes marinus) in the Gulf of Maine. Fish. Bull. of fish and Wildl. Serv. 60: 1-31 (Fish. Bull. 156).

Validity of the otolith, which accrues one opaque and one hyaline band per year.

McIntyre, A. D. 1959. Scottish investigations. Ann. biol. Copenhague, 14 (1957), 33-35.

Biological statistics of redfish caught by F.R.V. "Explorer" in 1956 and 1957 during four trips in Icelandic coastal waters. Although the fish were not specifically identified "it is likely that the majority, if not all over 30 cm, were Sebastes marinus."

Magnússon, J. 1959. Fiskileit 1958 (Redfish Cruises in 1958). Aegir, vol. 52 nos. 4-5. Reykjavik. Icelandic text with English summary.

Magnússon, J. 1959. On the sex ratio of redfish in East Greenland and Icelandic waters in 1957. ICES, Ann. biol. vol. 14 p. 35-9.

The paper deals with a number of samples of redfish (Sebastes marinus) from off the East Greenland coast between Kap Farvel and Angmagsalik and off West Iceland. It shows that the sex ratio varies considerably both with area and depth and possibly also with season.

(Secr.).

Templeman, W. 1959. Redfish distribution in the North Atlantic. Bull. Fish. Res. Bd. Canada, No. 120, 173 pp.

The distribution of Sebastes marinus and to a much lesser degree that of Sebastes viviparus is described. Though Sebastes marinus may be divided in Sebastes marinus marinus, the ordinary redfish, and Sebastes marinus mentella, the deep-water redfish, these two subspecies were usually not differentiated in the available data. Therefore, mostly, it is possible to consider only the distribution of Sebastes marinus including both subspecies.

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Templeman, W. and E. J. Sandeman. 1958. Red flesh in redfish, Sebastes marinus (L.). J. Fish. Res. Bd. Canada, 15(4), pp. 695-700.

Occasional fillets of redfish salmon red in colour have been found in the Newfoundland area. A portion of a minced pair of the red fillets was extracted with acetone and the absorption spectrum of the solution measured at various wavelengths from 350 to 700 mμ. Maximum absorption was obtained at 475 mμ, which is similar to that of astaxanthin in acetone. An acetone extract of normal whitish-coloured redfish fillets showed no appreciable absorption over this range of wavelengths. Instances of red coloration of the flesh are also noted in haddock, cod and saithe.

Templeman, W. and E. J. Sandeman. 1959. Variations in caudal pigmentation in late-stage pre-extrusion larvae from marinus-mentella-type female redfish from the Newfoundland area. J. Fish. Res. Bd. Canada, 16(6): 763-789.

Late stage pre-extrusion larvae have been examined from 37 marinus-type and 44 mentella-type redfish, obtained from three localities in the Newfoundland area. Examination of 120 larvae from each fish has revealed that a difference exists between the two types, in the relative presence or absence of caudal melanophores in their larvae. The caudal melanophores, when present, are situated near the base of the caudal fin and ventral to the vertebral column. Caudal melanophores were absent in only 2.3% of the larvae from mentella-type parents in contrast to the absence of caudal melanophores in 76.1% of the larvae from marinus-type parents. When only those larvae having caudal melanophores are considered, larvae from marinus-type parents usually have but a single melanophore whereas those from mentella-type parents usually have two caudal melanophores.

This difference between larval samples provides evidence of the existence of a real genetic difference between mentella and marinus types of redfish in the Northwest Atlantic.

D. Others, Various

Beverton, R.J.H. and Holt, S.J. 1959. A review of the lifespans and mortality rates of fish in nature and their relation to growth and other physiological characteristics.

CIBA Foundation Colloquia on Ageing 5 (The Lifespan of Animals) pp. 142-180.

A relation between size and longevity is established and is shown to differ from one group to another e.g. clupeoids live longer for their size than gadoids.

The findings suggest the possibility of being able to obtain an approximate estimate of natural mortality rate from growth rate.

Blaxter, J.H.S. and Dickson, W. 1959. Observations on the swimming speeds of Gadus callarias, G. aeglefinus, G. merlangus, Clupea harengus, Salmo trutta (see and brown trout), Scomber scombrus, Pleuronectes platessa and Carassius auratus, together with observations on total distance swum at such speeds before exhaustion.

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Boulanger, J.-M. 1959. Morue, Sébaste et Capelan. Actualités Marines, vol. 3, no. 3, pp. 11-15.

Summary of research carried out at the Marine-biological Station de la Tabatière concerning cod, redfish and capelin.

(Secr.)

Colton, John B., Jr. 1959. A Field Observation of Mortality of Marine Fish Larvae due to Warming. Limnol. and Ocean. 4(2): 219-222.

Dead and decomposing larvae of northern forms found in intrusion of warm water on Georges Bank, while southern and oceanic forms were taken alive.

Gulland, J. A. and Holt, S. J. 1959. Estimation of growth parameters for data at unequal time intervals. J. Cons. Int. Expl. Mer. 25. 47-49:

Theory of method of determining coefficients of von Bertalanffy equation from data of tagging experiment etc., with a table to assist computation.

Hansen, P. M. 1959. Spotted wolffish (Anarchichas minor). ICES; Ann. biol. vol. 14, p. 40.

Length distribution of samples from various West Greenland coastal areas.

(Secr.)

McKenzie, R. A. 1959. Marine and freshwater fishes of the Miramichi River and Estuary, New Brunswick. J. Fish. Res. Bd. Canada, 16(6): 807-833.

The Miramichi is the largest river in northeastern New Brunswick. The watershed covers an area of about 3,500,000 acres. Its waters support commercial fisheries valued at about $1,250.000 in 1952 and 1953. The commercial fisheries are located in the tidal waters which extend inland about 50 miles. The fresh waters extend inland about another 100 miles. Water temperatures range from -1.6°C in winter to 25°C in summer and salinities from 0 °/oo to 30 °/oo.

Thirty-eight families represented by at least 78 species of fishes have been found in the waters of the Miramichi system. Of the species, 53 are marine, 7 anadromous, 1 catadromous, and 17 freshwater.

O'Rourke, F.J. 1959. Serological relationships in the genus Gadus. Nature, Lond., 183:1192.

The Libby photronreflectometer was used to determine the serological relationship of three species of Gadus viz. callarias, aeglefinus, and pollachius. The haddock and pollack are closely related while the cod is equally remote antigenetically from both. (Auto-Rew).

O'Rourke, F.J. 1959. Species Specificity of Fish Mucus. Nature, Lond., 184: 2039.

Using the Kawerau circular disc chromatographic technique it is shown that each species of fish has a species-specific type of mucus.

(Auto Rev.)

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Parrish, B. B. and Sharman, D. P. 1959. Otolith types amongst summer-autumn spawning herring in the northern North Sea. J. Cons. int. Explor. Mer, 25(1), 81-92.

An account of distinctions which have been made between otolith types among herring recruiting to the north-western North Sea fisheries, in relation to nursery areas and growth problems.

Sindermann, Carl J. and Donald F. Mairs. 1959. A major blood group system in atlantic sea herring. Copeia 1959 (3): 228-232.

An erythrocyte antigen found in different amounts in geographical groups of immature herring in the Gulf of Maine.

IV. SHELLFISH

Carlisle, D. B. 1959. On the sexual biology of Pandalus borealis. J. Mar. biol. Ass. U.K., vol. 38, p. 381-94.

The X organ-sinus gland complex of P. borealis ill. a condition which is relatively primitive in decapods; the complex is described and the histology and topography of the various parts figured. The vas deference gland is described and its special features noted. The correlation between its condition and the sexual state of this protandric hermaphrodite is stressed.

(FAO).

Dickie, L. M. 1959. Water temperature and survival of giant scallop. Trans. Amer. Fish. Soc. 88(1), p. 73.

A summary of papers published in J. Fish. Res. Bd. Canada.

Merrill, Arthur S. 1959. A comparison of Cyclopecten nanus Verrill and Bush and Placopecten magellanicus (Gmelin). Occ. Pap. Moll. M.C.Z. 2(25): 209-228. Descriptions of genera and species.

Merrill, Arthur S. 1959. An unusual occurrence of Mya arenaria L. and notes on other marine mollusks. The Nautilus 73(2): 39-43.

Molluscs found on a buoy out for a known period have yielded new information on growth.

Schroeder, W. C. 1959. The lobster, Homarus americanus, and the red crab, Geryon quinquedens, in the offshore waters of the western North Atlantic. Deep Sea Research 5:4.

A population of lobster from deep water (110-450 m) off the east of Georges Bank to off the offing of Delaware Bay is described. The percentage of larger individuals is considerably higher in this deep-water population off the USA east coast.

Squires, H. J. 1959. Squid inshore in Newfoundland and on the Grand Bank, 1953 to 1958. Fish. Res. Bd. Canada, Atlantic Prog. Rept., No. 72, pp. 23-26.

The abundance of squid (Illex illecebrosus) inshore in Newfoundland may apparently be forecast from the catches of research vessels on the Grand Banks in May and June

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of any year. Evidence of this is considered for the years 1953 to 1958.

Squid and pilot whale populations are for the most part oceanic, and it is suggested that in some years when food of squid is abundant offshore, migration into inshore areas may be less than in other years. Offshore catches by the Investigator II in the years 1946 to 1958 and A. T. Cameron in 1958 as well as sight records by the Sackville, 1958, are used to indicate general occurrence annually.

V. OTHER MARINE ORGANISMS

Meyers, Betty J. 1959. The stomach contents of harp seals (Phoca grönlandica Erxleben) from the Magdalen Islands, Quebec. Can. J. Zool. Vol. 37, p. 378.

From March to May 1956 I examined the stomach contents of 195 adult harp seals (75 females, 120 males) whelping in the Magdalen Islands area. The stomachs of 107 (55%) contained food, the remaining (mostly of seals taken in March and April) 88 (45%) being empty. The stomach contents consisted of: herring (Clupea harengus Linnaeus, 1758) in 58%; flatfish sp. in 15%; redfish (Sebastes marinus (Linnaeus, 1758), in 4%; witch (Glytocephalus cynoglossus (Linnaeus, 1758)), in 1%; plaice (Hippoglossoides platessoides (Fabricius, 1780)), in 1%; and sea mouse (Aphrodita Linnaeus) in one stomach which contained no other food. One stomach contained the remains of crustacea which had probably been released from the digested stomach contents of larger organisms.

VI. FISHERIES and FISHING INDUSTRY

Anon. 1959. Atlantic States Marine Fisheries Commission. Seventeenth Annual Report. 104 pp.

Berube, Zéphirin. 1959. Statistiques des pêches - 1958. Actualités Marines, vol. 3, no. 3. pp. 27-32.

Quantity and value of catch by spp. and regions; utilization; fishing boats and gears, ice-plants etc.; fishermen of each region engaged in each unit fishery and on each kind of boat.

Blanke, W. 1959. Seefischerei und Fischereipolitik im nordatlantischen Raum (Sea fishery and fishery policy in the N. Atlantic region) . Forschungsstelle für Fischereiwirtschaft, Bremen. Hamburg. p. 1-230.

After a summary introduction (p. 17-118), each of the countries fishing in the N. Atlantic area are considered separately as to landings, fishing areas, vessels, fishing plants and trade.

(Secr.)

Botelho, A. T. 1959. Aspectos technologicos da preparação de bacalhau desde a captura à secagem. (Technological aspects of the treatment of cod from the capture until the drying). Boletim da Pesca, XII, 63, pp. 11-89.

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Describes the artificial drying methods and the plants and methods for the drying of salt cod in Portugal.

(Secr.)

Castell, C. H. 1959. Jaqueline Dale and Maxine.
F. Greenough. 1959. Spoilage of fish in the vessels at sea: 6. Variations in the landed quality of trawler-caught Atlantic cod and haddock during a period of 13 months. J. Fish. Res. Bd. Canada, 16(2): 223-233.

A study has been made of the landed quality (i.e., the quality at the time of discharge from the vessels) of trawler-caught, gutted and iced market cod and large haddock. The rate of deterioration, as indicated by the rise in TMA values, varies with the time of the year. Poorer quality fish are landed during the colder months of November and December and also during the warmer summer months of June, July, and August. The best quality fish are landed during the months of February, March, April, May and September.

This seasonal spoilage pattern is similar for cod and for haddock and has been observed in the landed quality of the fish from eight individual trawlers over a period of 13 months.

Some of the probable factors that bring about this seasonal pattern in the spoilage rate of these fish are discussed.

De Jorio, F. 1959. Prospettive por lo sfruttamento dei banchi dell' Africa Occidentale. (Prospectives on the exploitation of the fishing grounds of West Africa. (G. Pesca, 9(2):3

Freund, K. 1958. Zur Fischerei an der Labradorküste (On the fisheries off the coast of Labrador). Fischereiforschung, 1(5):18-20.

Reviews fishing possibilities, describes composition of catch and compares redfish populations with those of other fishing grounds.

(FAO).

Leite, A,D.M. 1959. Da evolução das instalações frigorificas nos arrostões portugueses de pesca do alto. (On the development of refrigeration plants in the Portuguese high sea trawlers). Boletim da Pesca, XII, 63, pp. 91-115.

Describes the different systems in use, and presents conclusions as to their effectivity.

(Secr.)

Lundbeck, J. 1959. Biologisch-statische Untersuchungen über die deutsche Hochseefischerei - IV. Die Entwicklung der Hochseefischerei in fangtechnicher, räumlicher und biologischer Hinsicht - 4. Leistungsfähigkeit und Fangerträge der deutschen Fischdampferflotte 1885 bis 1955. (Biological-statistical investigations of the German high sea fishery - IV. Development of the high-sea fishery with regard to catching-techniques, spacial, areal and biological aspects -4. Capacity and catch yield of the German fish-steemer fleet 1885-1955). Ber.dtsch.Komm.Meeresforsch., 15:159-237.

(As per title)

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McHugh, J. L. 1959. Can we manage our Atlantic coastal fishery resources? Trans. Amer. Fish. Soc., 88: 105-10.

Methods designed to foster management for optimum sustained yield for each import out sp., holds little promise for management of migratory fishes in inshore waters of the Atlantic coast. More consideration should be given to management of the biomass of the entire resource. Some statistics of the Atlantic coast fisheries are given and promising approaches for bettering management discussed.

(FAO)

McKernan, D. L. 1959. Present status of commercial fisheries in the United States. Trans. Amer. Fish. Soc., 88: 169-75.

Relation of 1957 catches to those of preceding year; economic difficulties of the industry; increased imports maintain steady per capita consumption.

(FAO)

Meyer, A. 1959. Die deutsche Salzfisch-Fischerei, 1958 (German Saltfish-fishery, 1958). Jahresber. ü. die deutsche Fischwirtschaft 1958; p. 120-150.

Statistical data on the German fishery for salt fish in the northern seas, mainly Greenland, 1953-1958, special information on the activity of common trawlers, trawlers with fish-meal plants and factory ships. Description of the fishery and the yields.

(Secr.)

Meyer, A. 1959. Die erste Suchreise 1959 to Newfoundland und Labrador. (The first search-trip 1959 to Newfoundland and Labrador). Hansa, Jg. 96. no.48, p. 2511-12. (Also publ. in Inf. f. die Fischwirtsch. Jg. 6, no. 4/5 p. 84-6).

The area from N. of Hamilton Bank to Flemish Cap was searched from 26 Aug.-2 Oct. Large catches of redfish and cod were made around Flemish Cap, but individual size of both species was small. (Redfish 33, Cod 55 cm m.l.). On the N. and NE. slopes of the Grand Bank catches were smaller, but individual size larger. Further N. (Ritu Bank and off Labrador) catches were small, considerably lower than in 1958. Based on the search trip German trawlers started fishery N. and NE of the Grand Bank.

(Secr.)

Meyer, A. 1959. Die isländischen Fischsuchfahrten 1958 und ihre Ergebnisse. (The Icelandic searching cruises in 1958 and their results). Hansa, Jg. 96, nos. 12/13. p. 661-2, also published in Wiss. Inf. f. die Fischereipraxis, Jg. 6, no. 1, p. 11-13.

(As per title)

Meyer, A. 1959. Die Suchreisen deutscher Trawler 1958 und ihre Ergebnisse. (The search-trips of German trawlers 1958 and their results). Hansa, Jg. 96. no. 2/4, p. 228. (Also publ. in Inf. f. die Fischwirtsch. 6,2,1.

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Trip Aug.-Sept. S and W Greenland to 70°N.
Trip Sept.-Oct. E Greenland 61-68°N.
Trip Sept.-Oct. S and W Greenland to 68°N.
Trip Sept.-Oct. Iceland, Jan Mayen, E Greenland 63°-71°N.
Off S Greenland the fishery for cod was not promising, an improvement is to be expected in 1960, due to the rich 1953 year class. A similar improvement is to be expected in the Store Hellefiske Bank area. Possibility for satisfactory trawling for redfish is recorded for the slope region between Julianehaab and Lille Hellefiske Bank.

(Secr.)

Meyer, A. 1959. Zur Fischerei vor Labrador und Newfoundland (On the fishery off L. and N.) Hansa, Jg. 96, no. 19/20 p. 995-6.

Summary of the results of the Icelandic searching cruises in 1958, and a description of the ice conditions in the Labrador area.

(Secr.)

Meyer, A. 1959. Zur neuen deutschen Fischerei von Labrador. (On the new German fishery off Labrador). Hansa, Jg. 96, no. 5. p. 257-260.

A summary of the German fishery in the Labrador region, the ice conditions, and the hydrography. The possibility of extending the fishery to the south-east, towards Flemish Cap.

(Secr.)

Sommer, K. 1959. Die See- und Küstenfischerei und die Fischversorgung der Bundesrepublik Deutschland im Jahre 1958. (High-sea and coastal fishery and the fish supply of the German Federal Republic in 1958).

(As per title)

VII. GEAR

Boulanger, J.-M. 1959. Une nouvelle planche à mesurer le poisson. Actualités Marines, vol. 3, no. 1, pp. 25-28.

Description of the board which has a hole in each measurement interval opening into a container; measurements are recorded by dropping a ball or other marker through the appropriate hole.

(FAO)

Brandt, v.A. 1959. Schleppnetzbestimmungen und Nordseekonvention (Trawl regulations and North Sea convention). Allg. FischwirtschaftZtg., 11(4):15-6

Reports briefly on possible effects of meshsizes on Atlantic and North Sea fish stocks.

(FAO)

Brandt, v. A. Vorschau auf die künftige Entwicklung der Fangtechnik. (Prediction of future development of the technics of fishing).

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Inf. f. die Fischwirtschaft. 6,2. Hamburg 1959.

Transfer at sea of catch from trawler to factory ship. Pelagic trawling. Knotless nets and trawls.

(Secr.)

Clark, J. R. 1958. Size selection of fish by otter trawls. Proc. Gulf and Carib. Fish. Inst. 10: 113-118. A review.

Colton, John B. Jr. 1959. The multiplane kite--otter as a depressor for high-speed plankton samplers. ICES, Journ. du Conseil. 25(1): 29-35.

The multiplane kite-otter is described. Depth and wire profile calibrations are given.

Craig, R. E. 1959. Echo sounding and fish detection. FAO Modern Fishing Gear of the World, London, pp. 474-7.

A review of echosounding methods, comparing the requirements for fish detection with those for sea-bed studies, etc. and introducing the idea of an oscillator mounted in a streamlined housing, which the author calls a "shark". Future trends are discussed.

Craig, R. E. 1959. Some successful experiments with a pencil-beam echo sounder. World Fishing, 8(12), pp. 40-43.

Following a note in "World Fishing" of March 1959, this note describes an experimental echosounder with an extremely narrow or "pencil" beam and a frequency of 400 K/cs. The detailed results obtained to depths of 50 fm are illustrated. This echosounder model has been fitted both in a streamlined body ("shark") on a 15 fm cable, for vertical stability and to avoid most of the aeration, and also in the ship's hull.

Dickson, W. 1959. The use of model nets as a method of developing trawling gear. FAO Modern Fishing Gear of the World London. 166-74.

Concerned with the theory and practice of using models in designing fishing gear, etc., with reference to observations by underwater photography and measurements made on both models and full-sized gear.

Dickson, W. 1959. The use of the Danish seine net. FAO Modern Fishing Gear of the World, London, pp. 375-81.

A comparison is made of the relative advantages and disadvantages of Danish seining versus trawling. A detailed description is given of anchor seining and fly dragging, with particulars of the gear, boats, and fishing operations.

Freyberg, B. 1959. Technish bedingte Aktionsgrenzen der heutigen deutschen Fischereiflotte und ihre künftige technische Entwicklung. Inf. f. die Fischwirtschaft. 6,2. Hamburg (Technically caused limits of action of the present German fishing fleets, and its future technical development.

(As per title)

Hempel, G. and D. Sahrhage. 1959. Zur Berechnung der Anteile nicht angelandeter und untermassiger Fische im Gesammtfang.

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(On the calculation of the proportion of discarded and undersized fish in total catches). Arch f. Fischereiwiss. Bd. 10. H. 1/2. pp. 58-68.

(As per tittle)

Livingstone, Robert Jr. 1959. Television observation of the behavior of marine fish in a trawl net. (Abstract). Anat. Rec. 134(3): 602. AlsoBull. Ecol. Soc. Amer. 40(3): 86.

Film showing escape behaviour of sand launce and haddock.

Livingstone, Robert Jr. 1959. The use of underwater television for studying the behavior of marine fish in trawl nets. (Motion picture, 15 min.) Abstract). Anat. Rec. 134(3): 601-602. Also Bull. Ecol. Soc. Amer. 40(3): 94.

Description of film and of underwater television studies.

Martin, W. R. 1959. Spanish pair-trawler operations. Dept. Fish. Canada, Trade News, 12(6): 3-6.

A report on a Canadian sea trip in September 1959 to observe Spanish pairtrawler operations on the southeast shoal of the Grand Bank.

Nedelec, C. et Libert, L. 1959. Etude du chalut. I. Coupe et montage du chalut. - Rev. Trav. Inst. Pêches marit., Paris, 23 (2).

The paper gives a detailed description of the nets and ropes used in the construction of trawls, of the ways of cutting and joining the various parts of the trawl, and of how this procedure may influence the opening of meshes and the behaviour of the trawl during hauling.

(Secr.)

Nedelec, C. et Libert, L. 1959. Etude du chalut. II. Adaptation du chalut et de son gréement aux différentes pêches.- Rev. Trav. Inst. Pêches marit., Paris, 23 (3).

The paper describes the various types of trawls in use in North Atlantic region: Otter trawls, pelagic trawls, and pair trawls. It is illustrated by numerous figures showing the form and the measurements of the various parts of the trawls.

(Secr.)

Olsen, S. J. 1959. Mesh selection in herring gill nets. J. Fish. Res. Bd. Canada, 16(3): 339-349.

A method described by Holt (1957) to determine the effect of mesh selection in gill nets, has been applied to a material of herring collected in Newfoundland waters in 1957-58.

The method requires simultaneous operation of two or more nets, differing slightly in mesh size, but identical in every other respect. The selection curve for herring nets was found to be fairly sharply peaked and slightly skewed to the right.

Simultaneous samples of catches taken by three different mesh sizes and adjusted accordingly for the effect of mesh selection did not, in general, differ significantly in

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length composition over the main range of length distribution.

Parrish, B. B. 1959. Midwater trawls and their operation. FAO Modern Fishing Gear of the World, London, pp. 333-43.

A survey of midwater trawls known in 1957, when the Conference was held, dealing with the main biological factors concerned in the use of midwater trawls and the general principles of their design.

VIII. MISCELLANEOUS

Anon. 1959. A new research trawler for Canada - A. T. Cameron for east coast service. World Fish. 8 (1): 46 8.

Ill. descr. of new 177 ft vessel and equipment operated by Fish Res. Bd. of Canada.

(FAO)

Anon. 1959. Fish stock record. 1958. Min. Agric. Fish and Food and Scottish Home Dept. Aberdeen-Lowestoft.

The state of many of the stocks fished by British vessels is described in terms of catch, effort and catch per effort, in most cases for each 5 cm. length group. Data are derived from market sampling, catch statistics and research vessel studies. Individual stocks are discussed and prospects for fishing in 1959 forecast. Greenland cod is included.

Anon. 1959. Undersøgelser i havet ved Færøerne og i de nordlige havomraader. (Investigations in the seas around the Faroes and in the northern sea areas). Dahsk Fiskerit. no. 77, pp. 229-30.

Rev. of Danish hydrographical and fisheries investigations during 1958 and notes on international herring investigations.

(FAO)

Bertelsen, E. and P.M. Hansen. 1959. Fiskeriundersøgelser i 1958 ved Danmark, Færøerne og Grønland. (Fishery researches in 1958 around Denmark, the Faroes and Greenland). Danmarks Fiskeri- og Havundersøgelser. Skr. no. 19.

A summary of research operations and their main results. (See Danish Research report, 1958. ICNAF, Ann. Proc. vol. 9 p. 31).

Bishop, Yvonne M. M. 1959. Errors in estimates of mortality obtained from virtual populations. J. Fish. Res. Bd. Canada, 16(1): 73-90.

The bias in individual estimates of the natural mortality coefficient derived from the ratio of successive virtual populations is defined algebraically and is shown to be unchanged whether one or more year-classes is considered, if the mortality coefficients are assumed to be constant for all exploitable fish. Limiting and probable values of this bias are shown graphically for a coefficient of

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fishing mortality ranging from 0 to -2.0 in the year for which the estimate is obtained. These values are drawn for true natural mortality of -0.2 and -0.4 and for both an increasing and a decreasing fishing effort. Bias in individual estimates of natural mortality is greatest when there are large fluctuations in fishing effort, particularly when fishing mortality is low relative to natural mortality, and it increases with increased natural mortality.

A linear regression of a series of virtual population ratios would in general give an intercept value which underestimated the coefficient of fishing mortality, in situations where F has tended to increase and also where it has had no trend (the "steady state" of Table I). Both these errors would be in the opposite direction during a period when there was a decline in fishing effort.

Gulland, J. A. and S. J. Holt, 1959. Estimation of growth parameters for data at unequal time intervals. ICES, J. du Cons., 25(1): 47-9.

Theory of method of determining coefficients of von Bertalanffy equation from data of tagging experiments etc., with a table to aid computation.

(FAO)

Hansen, P.M. 1959. De fiskeribiologiske undersøgelser i de grønlandske farvande. (The fisheries biological investigations in Greenland waters).

Rev. of Danish inv. in the areas around Greenland during 1958 and prognoses on the future cod fishery in this area.

(FAO)

Hart, J. L. 1958. Fisheries Research Board of Canada Biological Station, St. Andrews, N.B., 1908-1958. Fifty years of research in aquatic biology. J. Fish. Res. Bd. Canada, 15(6), pp. 1127-1161.

The year 1958 marks the Fiftieth Anniversary of the founding of the two oldest research stations of the Fisheries Research Board of Canada at St. Andrews, N. B., and Nanaimo, B. C. In commemoration of the occasion one issue of the Board's Journal is devoted to the St. Andrews Station and one to the Nanaimo Station. The first article in the St. Andrews issue is an illustrated account of the history and present activities of the Station, prepared by its Director. This has also been published in booklet form.

Holt, Sidney J., John A. Gulland, Clyde Taylor and S. Kurita. 1959. A standard terminology and notation for fishing dynamics. ICES, Jour. du Cons. 24(2): 239-242.

Per title with terminology in English, Japanese and German.

Ivlev, V. S. 1958. Some problems of theoretical ecology (in Russian). Biull. moskovsk. Obshchest. Ispyt. Priody, Otd. Biol., 63 (1): 5-14.

Various interpretations of quantitave laws governing the numeric growth of populations are discussed. Examines some simple shemes in which the growth of populations is described by exponential equations. An example taken from Gause's work is used for the analysis of that author's ideas.

(FAO)

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McHugh, J. Laurence. 1959. Recent advances in marine fishery research along the Atlantic coast. Rep. Atl. States Mar. Fish. Comm. 17: 60-61.

Introduction to progress reports.

Perlmutter, A. 1959. Application of behavioral investigations to fisheries problems. Bull. Ecol. Soc. Amer. 40:95.

As per tittle

Rass, T. S. 1959. Biogeographical fishery complexes of the Atlantic and Pacific oceans and their comparison. ICES, J. du Cons., vol. 24; pp. 243-54.

Comparative study of quantities and taxonomic composition of catches, and explanation of differences in terms of climatic history. Suggestions for enriching the poorer Atlantic fauna.

(FAO)

Schaefer, Milner B. 1959. (In) Natural Resources, McGraw-Hill, New York, pp. 73-109. A review of current status and prospects.

- ADDITIONAL USSR PAPERS -

I. HYDROGRAPHY

G. N. Zaitsev. "Newfoundland Bank", booklet published by "Rhybnoe Khozjaistvo".

The booklet summarizes the data of the hydrometeorological regime of the Grand Newfoundland Bank.

VI. FISHERIES AND FISHING INDUSTRY

A. V. Mikheev. The perspectives of the Soviet fisheries development in the Atlantic. Published by "Rhybnoe Khozjaistvo" N 11, 1959.

Some data characterizing the state of fisheries in the ICNAF area and the future of this region are given here.

Ju. Ju. Marty. The development of fisheries in the North Atlantic. Published by "Rhybnoe Khozjaistvo" N 4, 1959.

Problems of efficiency of fisheries in the Northwest and Northeast Atlantic are considered.

L. N. Petshenik. Fish resources in Davis Strait. Published by Rhybnoe Khozjaistvo N 5, 1959.

The paper gives some information on catches off Greenland, hydrological features of the Davis Strait, information on the research work carried out.

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