

New NMFS Scientific Reports Published

The publications listed below may be obtained from either the Superintendent of Documents (address given at end of title paragraph on pertinent publications) or from D822, User Services Branch, Environmental Science Information Center, NOAA, Rockville, MD 20852. Writing to the agency prior to ordering is advisable to determine availability and price where appropriate. Prices may change and prepayment is required.

NOAA Technical Report NMFS SSRF-711. Rice, Dale W. "A list of the marine mammals of the world." April 1977. 15 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

ABSTRACT

Listed are the 116 species of Recent marine mammals, including freshwater species of the predominantly marine groups. The number of species are: Order Carnivora, 36 (polar bear, sea otter, and 34 pinnipeds); Order Sirenia, 5; Order Mysticeti, 10; and Order Odontoceti, 65. The geographic distribution of each species is indicated.

NOAA Technical Report NMFS SSRF-712. Bruce, Herbert E., Douglas R. McLain, and Bruce L. Wing. "Annual physical and chemical oceanographic cycles of Auke Bay, southeastern Alaska." May 1977. 11 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

ABSTRACT

The annual cycles of physical and chemical oceanographic conditions in Auke Bay, a small estuary in southeastern Alaska, showed a con-

sistent pattern over an 8-year period (1961-68). The cycles closely followed seasonal climatological and atmospheric events. Increased insolation in the spring caused general warming of the surface water and the air, which in turn increased the freshwater input into Auke Bay from melting snow and ice. The fresh water lowered surface salinities and together with warming of the surface waters caused a density stratification of the water column, which increased as the spring-summer season progressed. Maximum stratification occurred in August, followed by a general decay of stratification in September. Vertical mixing of the top 20 m of the water column by fall storms in September and cooling of surface water resulting from decreased insolation set up a thermohaline circulation that continued through the fall and early winter. The water column became homogeneous by January and remained thoroughly mixed from January through March or early April. Auke

Bay was rich in the inorganic nutrients phosphate, silicate, and nitrate. Spring phytoplankton blooms followed the onset of stratification and drastically reduced the concentration of all three nutrients in the surface water. Nitrate was essentially depleted and remained so throughout the summer. Low nitrate availability was undoubtedly one of the important factors limiting primary production in Auke Bay.

NOAA Technical Report NMFS Circular 403. Cutler, Edward B. "Marine flora and fauna of the northeastern United States. Sipuncula." July 1977. 7 p. For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

ABSTRACT

This report includes an account of the five species of Sipuncula living in shallow waters (down to 200 m) from Maine to Virginia. Four of these are widespread elsewhere in the world—*Golfingiaeremita*, *G. margaritacea*, *G. minuta*, and *Phascolion strombi*. *Phascolopsis gouldi* is endemic to the east coast of North America. An introduction to their biology, an annotated systematic list, selected bibliography, and an illustrated key are presented.

ICES Issues Statistics, Studies on Fish Stocks

The International Council for the Exploration of the Sea (ICES) issued in April 1977 the "Annales Biologiques-1975," containing yearly records and data, arranged by species and areas, of the state of fishery and shellfish stocks in the northeast Atlantic. The Council, located in Charlottenlund Slot, Denmark, has served as a scientific advisory body for the Northeast Atlantic Fisheries Commission (NEAFC) specializing in marine biological research, especially stock assessment.

The present volume is a 214-page collection of 113 contributions, organized in three parts, dealing with 1) hydrography, 2) plankton, and 3) the major fish species. The longest part is

devoted to fish, and this section is divided according to the major groups of fish species, the most important being the Gadoids (cod-like fishes) and the Clupeoids (herring-like fishes). Practically all of the studies deal with the state of fishery stocks in 1974 and 1975 and are therefore somewhat dated. In addition, the data tend to be most complete in those studies which focus on the North Sea, although there is a wealth of information on the entire area falling under ICES jurisdiction. There is also a preface by the Director of ICES, Hans Tambs-Lyche, and a short section reporting the results of joint fishery research projects undertaken in 1975.

Those interested in obtaining a copy

of the "Annales Biologiques" (cost is about \$14) should write to: International Council for the Exploration of the Sea, Charlottenlund Castle, DK-2920 Charlottenlund, Denmark.

U.S.-Foreign Fisheries Report Printed by GAO

The General Accounting Office has prepared a 477 page report for the Congress entitled "**The U.S. Fishing Industry—Present Conditions and Future of Marine Fisheries.**" In addition to analyzing Federal fishery laws, summarizing basic data on major U.S. fisheries, detailing domestic and foreign catches off the U.S. coasts, and assessing the impact of the U.S. 200-mile zone on international fishery conventions and agreements, the report has profiles of the fishing industries of Canada, Denmark, Japan, Mexico, the Soviet Union, the United Kingdom, and the Federal Republic of Germany. These foreign fishery reports were primarily based on material obtained from the files of the NMFS Branch of International Fishery Analysis.

A copy of the report may be purchased for \$1.00 by requesting report CED-76-130-A, 23 December 1976, from: U.S. General Accounting Office, Distribution Section, P.O. Box 1020, Washington, DC 20013. Payment should be made by a check payable to the U.S. General Accounting Office.

BEAUFORT SEA FISH BIBLIOGRAPHY NOTED

A new bibliography on fish resources of far-northern waters has been published by the University of Alaska. The publication, "**An Annotated Bibliography of the Fishes of the Beaufort Sea and Adjacent Regions,**" was compiled by Wilma E. Pfeifer of the Institute of Arctic Biology.

"This bibliography was prepared to serve as a reference base for further studies in the area, particularly as related to the impact of petroleum exploratory activities on the fish fauna," writes Pfeifer in the introduction. "Included are all discovered references on

the fishes of the Beaufort Sea and/or immediately adjacent regions."

Preparation of the bibliography was supported by the Bureau of Land Management through interagency agreement with the National Oceanic and Atmospheric Administration, which is charged with conducting environmental assessment work on the Outer Continental Shelf in connection with planned offshore petroleum development. Inquiries concerning the publication should be addressed to The Editor, Biological Papers of the University of Alaska, Fairbanks, Alaska 99701.

"Industrial Fishery Technology" Revised

A second edition of the book, **Industrial Fishery Technology**, edited by Maurice E. Stansby, has been published. Chapters have been updated, and in some cases extensively rewritten. Two new chapters have been added. One of these, by Maynard Steinberg and John Spinelli, is entitled, "Some Developing Trends for the Use of Fishery Resources." The other, by Maurice Stansby and Richard Nelson, is titled "Contaminants and Pollution."

As with the first edition, the book limits coverage to practices and applications in the United States. The 29 chapters, written by various fisheries specialists in the different fields, are grouped into five categories: 1) Fishes and Fishery Methods; 2) Description of Important Fisheries and Their Products; 3) Fishery Industrial Products; 4) Preservation Methods; and 5) Food Science Applications.

The new edition is published by Robert E. Krieger Publishing Co., Inc., Huntington, NY 11743, and is priced at \$18.50.

Fishery Economics Volume Published

Publication of Lee G. Anderson's "**The Economics of Fisheries Management,**" for Resources for the Future, Inc., has been announced by the

Johns Hopkins University Press, Baltimore, Md. The author has aimed this concise treatment of fisheries economics mainly at the noneconomist.

The first chapter introduces basic economic concepts while Chapter 2 treats fundamentals of fisheries economics. The main economic analysis is spelled out in Chapter 3, "A More Complete Analysis of Fisheries Economics."

Chapter 4, "Refinements of the Analysis," introduces more complex assumptions and gets into the more intricate economic models of fishery exploitation. Chapter 5 discusses fishery regulations, focusing on their economic aspects. Then, the U.S. northern lobster fishery and British Columbia's institution of a limited-entry system are used in Chapter 6, "Practical Applications," to show how the theory of the previous chapters can be used to provide useful information.

The 214-page hardbound book includes a list of "Study Questions" for chapters 2-5 and an index. It costs \$14.00.

Torry Research Unit Issues Annual Report

The Torry Research Station, a subdivision of the U.K. Ministry of Agriculture, Fisheries, and Food specializing in fisheries technology research, has issued its 1976 annual report. The 36-page report consists of 26 sections, usually only a page or two long, devoted to some special area of utilization, processing and product research, and an appendix which provides a thorough organizational breakdown of the various research groups, including the names of senior scientists and the cost of the programs.

In the introductory remarks, the Director of the Torry Research Station, G.H.O. Burgess, explains some of the broader considerations which determine the current focus and direction of U.K. efforts in fisheries technology research. With the decline of Britain's distant-water catch, due to exclusions and reductions of fishing around Iceland and off Norway, the U.K. fishing

industry must find substitutes for such traditionally favored species as cod and haddock, and must depend more heavily on fish caught within its 200-mile zone. This explains the high priority given to projects dealing with blue whiting, crab, Norway lobster (scampi), squid, krill, and new species for reduction to fish meal. The emphasis is on finding species and processed products which will be acceptable to British consumers and to the poultry and livestock industry.

Although there are several encouraging prospects, it appears from Burgess' introduction and the text that the most promising project is the research on the processing of blue whiting. He is optimistic enough to predict that the necessary technology will be developed by 1978 or 1979 to utilize blue whiting on a fairly wide scale as a food fish. The Torry Research Station, in Aberdeen, Scotland, had a 1976 staff complement of about 90 professionals and 130 non-professionals, and an operating budget of \$2.7 million. The Station also has one research trawler and a mobile laboratory. Those interested in receiving a copy of the report should write to: Torry Research Station, P.O. Box 31, 135 Abbey Road, Aberdeen, Scotland, AB9 8DG, United Kingdom. (Source: IFR-77/155.)

Japan Marine Product Import Groups Listed

A list of the members of the Japan Marine Products Importers Association has been submitted by the U.S. Regional Fisheries Attache in Tokyo. The listing is alphabetical, followed by an addenda, and includes each company's name, address, telephone and telex numbers, as well as the commodities in which the companies specialize.

The list is available from NMFS Regional Statistics and Market News Offices by requesting a copy of IFR-77/154 and enclosing a self-addressed mailing label.

Foreign Fisheries Volumes Translated

Copies of the following books, recently translated for the National Marine Fisheries Service under the Special Foreign Currency Science Information Program, are available from the Language Services Branch, F412, Office of International Fisheries, National Marine Fisheries Service, NOAA, Washington, DC 20235. Please request by accession (TT) number.

The volumes are: TT 76-5001, "Selected Works on Fishing Gear" by F. I. Baranov; TT 76-5002, "Handbook of Hydrological Studies in Oceans and Seas" by I. M. Soskin; TT 76-5005, "Camallanata of Animals and Man and Diseases Caused by Them" by V. M. Ivashkin et al.; and TT 76-5008, "Forecasting of Hail, Thunderstorms and Showers" by G. K. Sulakvelidze et al.

FRG Fisheries Research Agency Reports for 1976

The Federal Fisheries Research Agency (Bundesforschungsanstalt für Fischerei) in Hamburg, a division of the Ministry for Food, Agriculture, and Forestry in the Federal Republic of Germany (FRG), has issued its 1976 annual report. The 76-page report, in German, provides a detailed and thorough account of research activities, personnel, and cooperation with other FRG and foreign government agencies. The Agency, directed by Dietrich Sahrhage, employs 214 persons (of which 68 are scientists) in four research institutes and an isotope laboratory.

The major efforts in 1976 were in the fields of stock assessment, research on new and underutilized species, and scientific cooperation with several international organizations responsible for fishery affairs, such as NEAFC, ICES, and ICAF. The most publicized FRG fishery research projects were those undertaken by the group specializing in distant-water fisheries with the research vessels *Walther Herwig*, *Anton Dohrn*, and *Solea*. The results of their studies,

including research on krill in the Antarctic, blue whiting in the northeast Atlantic, and several other species, will be of considerable interest to marine biologists and those concerned with the policy and commercial aspects of international fisheries. Other sections of the report discuss the work of the Fisheries Research Agency in the areas of coastal fisheries, new catch techniques, and recent developments in fisheries biology and marine pollution. Those interested in obtaining a copy of the report should write to: Professor Dietrich Sahrhage, Director, Bundesforschungsanstalt für Fischerei, Palmaille 9, 2000 Hamburg 50, Federal Republic of Germany. (Source: IFR-77/172.)

"Practical Shellfish Farming" Published

Publication of "Practical Shellfish Farming" by Phil Schwind has been announced by International Marine Publishing Company, 21 Elm Street, Camden, ME 04843. Schwind, who has authored "Making a Living Alongshore," "Clam Shack Cookery," and "Cape Cod Fisherman," is a long-time commercial fisherman who teaches a course on aquaculture at a local community college. Also Shellfish Constable for the Cape Cod town of Eastham, Mass., the author gives a brief history of shellfish farming in that area, describes shellfish farming experiences on Cape Cod, where, he says, their shellfisheries have increased tenfold.

Short chapters discuss the author's experiences in farming quahogs, *Mercenaria mercenaria*, clams, *Mya arenaria*, oysters, *Crassostrea virginica*, and blue mussels, *Mytilus edulis*.

Schwind discusses selecting an area and getting the appropriate grant to farm it, acquisition of seed, planting methods, shellfish growth, types of culture (off-bottom, bottom culture, rope culture, trays). One chapter is devoted to Predators and Their Control. The 91-page hardbound book also includes a short glossary and bibliography. It costs \$8.95.