



FREEZING & IRRADIATION

"Freezing and Irradiation of Fish," edited by Rudolf Kreuzer, Fishing News (Books) Ltd., Ludgate House, 110 Fleet Street, London EC4, England, 1969, 528 + xvii pp., illus.

This is a record of the FAO Congress on the Freezing and Irradiation of Fish, Madrid, September 1967. The intention of the Congress was to provide the latest and most complete knowledge about the merits and capacities of refrigeration practices as a contribution to fuller utilization of the world's fishing catch for human food. While essentially scientific, this volume should be of enormous practical importance to all fish processors and distributors.

The book, divided into six main parts, includes 80 papers from probably the most experienced and authoritative scientists and technicians in the world. Much valuable and informative material from session discussions has been included.

The 6 main parts are:

1) Freezing fish at sea; techniques and equipment, factors affecting quality, freezing media, and superchilling.

2) Freezing and processing of frozen fish; physical effects of freezing, specific problems and techniques, effect of polyphosphate treatment, freezing tropical fish, and thawing of frozen fish.

3) Economics of producing and marketing frozen fish products; shore-based plants, economic considerations, and product development.

4) Quality of frozen fish products and its assessment; factors influencing quality and the measures of assessment.

5) Storage, packing, and distribution; design and operation of cold stores, and methods of packing and distribution.

6) Preservation by irradiation; quality present status, production technology, and economic aspects.

FROZEN FISH

"Draft Code of Practice for Frozen Fish," Organization for Economic Cooperation and Development, Paris, 1969 (French and English), 74 pp., \$1.80. Sold by OECD Publications Center, Suite 1305, 1750 Pennsylvania Ave., N.W., Washington, D.C. 20006

This is a guide for industry on the treatment of fish and fish products before, during and after freezing. It has been approved by the International Institute for Refrigeration and the OECD Fisheries Committee, and recommended to the WHO/FAO Codex Alimentarius Commission.

The code covers: raw material; freezing times and rates; sanitation and hygiene in handling and processing; packaging; storage; thawing; and transportation and retailing.

FROZEN FISH IN TRADE

"Market for Frozen Fish in OECD Member Countries 1964-1968," Organization for Economic Cooperation and Development, Paris, 1969, 120 pp., \$3. Sold by OECD Publications Center, Suite 1305, 1750 Pennsylvania Ave., N.W., Washington, D.C. 20006

The introduction of frozen fish as a commodity in international trade is comparatively recent. Modern mechanical refrigeration began in the late 1940s. By 1967, one million tons worth \$400 million to the shippers had entered international trade.

This study concentrates on frozen products from groundfish caught in the North Atlantic fisheries. It includes specific studies of prices, product groups, production, trade, and consumption in the principal exporting and importing countries. There are fairly complete analyses of the situation in Canada, Denmark, Germany, Iceland, Norway, the U.K., and the U.S.--and shorter sections on France, Greece, Japan, Netherlands, Spain, Sweden, and Eastern Europe.

GEAR

"German One-Boat Midwater Trawl, Development Since 1959 to Beginning of 1968," by Joachim Schaerfe, 'Informationen fuer die Fischwirtschaft,' Vol. 15, No. 3/4, Hamburg 1968. Translation sold by Clearinghouse, U.S. Department of Commerce, Springfield, Va. 22151, 65 pp., \$3 (microfiche 65¢). Order FT-68-50211.

Dr. Schaerfe is Chief, Gear Technology Section, Fishing Operations Branch, FAO. He describes the use of the one-boat midwater trawl in experimental work and in commercial fishing. The article also covers fishing conditions for herring, cod, hake, pollock, mackerel, and other species; fish behavior; fishing vessels, fishing efficiency and techniques; handling of catch on board; and gear--warps, trawl boards, bridles, front weights, headline floats, nets, and net sounders.

HYDRODYNAMICS

"Theoretical Hydrodynamics," by L. M. Milne-Thomson, Macmillan Co., New York, 1968, 743 pp., illus.

The science of hydrodynamics is concerned with behavior of fluids in motion. The object of this book is to give a thorough, clear, and methodical introductory exposition of the mathematical theory of fluid motion that will be useful in both hydrodynamics and aerodynamics. Dynamics of a frictionless fluid is a subject that has always been necessary to the naval architect.

As scientific theory becomes more exact, it tends to assume a more mathematical form. In a radical departure, the author has based

his presentation consistently on vector methods and notation. The previous mathematical knowledge required of the reader did not go beyond the elements of infinitesimal calculus.

SONIC-SCATTERING LAYER

"An Investigation on Sonic-Scattering Layers; the R.R.S. 'Discovery' SOND Cruise 1965," by R.I. Currie, B.P. Boden, and E.M. Kampa, 'Journal of the Marine Biological Association of the U.K.,' Vol. 49, No. 2, pp. 498-514, 1969.

The SOND 1965 Cruise was designed as an ecological study of sonic scattering layers at a certain season in a restricted volume of ocean near the Canary Islands. The primary intention was to study the vertical distribution and migrations of animals in the upper 1,000 meters. Biological, acoustical, and environmental observations were essentially independent but closely coordinated. The scientists hoped the cruise could assess the potential of acoustical methods for general use in distribution studies and, at the same time, cast some light on the nature of acoustic scattering in the sea. This article is a preliminary report on the investigation and its methods.



The following, published by the Fish & Wildlife Service, Department of the Interior, are available from Division of Publications, BCF, 1801 N. Moore Street, Arlington, Va. 22209.

ALGAE

"Green Algae, Chlorella, as a Contributor to the Food Supply of Man," by Norman W. Durrant and Carol Jolly, Fishery Industrial Research, Vol. 5, No. 2, 1969, pp. 67-83.

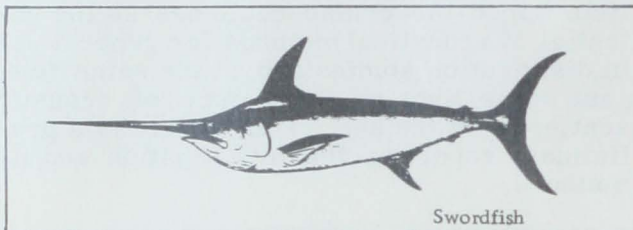
Efforts to solve world hunger usually fall into two categories: 1) controlling population growth; and 2) increasing food production. Whenever the latter is considered, the possibility of large-scale culture of green algae arouses great enthusiasm. This paper is concerned specifically with the tremendous potential of algae for increasing food supply.

A primitive group of plants, algae are usually classified according to their color--green, blue-green, brown, or red. They all contain the chlorophylls essential for the production of organic matter. Brown and red algae differ considerably from green and blue-green both in size and structural complexity; their potential for artificial cultivation and effective use as food is less than that of green and blue-green.

The authors examine the supplies and utilization of all algae, but report on the green in greater depth--especially developmental investigations and production and nutrition studies.

BILLFISHES

"Billfishes of the Central Pacific Ocean," by Donald W. Strasburg, Circular 311, 1969, 11 pp., illus.



'Billfish' is a collective term embracing the various kinds of marlin, spearfish, sailfish, and the broadbill swordfish. These large fishes, some exceeding 1,000 pounds, are found in all warm seas. Despite their size, game qualities, and commercial potential, they are poorly known biologically. The data used in compiling this report were obtained from the records of the Hawaiian International Billfish Tournament, the Hawaii State Division of Fish and Game, and scientific literature.

PACIFIC MACKEREL

"Synopsis of the Biological Data on the Pacific Mackerel, Scomber japonicus Houttuyn

(Northeast Pacific)," by David Kramer, Circular 302 (FAO Species Synopsis No. 40) 1969, 18 pp., illus.

Mr. Kramer has tried to assemble all existing knowledge on the identify (nomenclature, taxonomy, morphology), distribution, bionomics, life history, population, fishery and protection and management of the Pacific mackerel.

SALMON & STEELHEAD

"Identification of Pacific Salmon and Steelhead Trout, by Scale Characteristics," by Kenneth H. Mosher, Circular 317, 17 pp., illus.

Identification of species of salmon (Oncorhynchus) and steelhead (Salmo gairdneri) in Pacific coast sport and commercial catches is important in assessing the relative production and value of each species. At times it may be necessary to determine the species from a portion of fish, such as a steak or fillet. Any scales on these portions offer a means of identification. The species differ from each other in their life histories, and some scale features clearly show this difference. Fishery inspectors, in the field or on shipboard, will be able to use this illustrated guide with a minimum of preinstruction.

OCEANOGRAPHERS

"Explorers of the Deep," by Donald W. Cox, Hammond, Inc., New Jersey, 1968, 93 pp., illus., \$3.50.

This book should stimulate young people's interest in the oceans. It tells the stories of 18 "searchers of the sea"--biologists, geologists, engineers, and aquanauts--ranging from Ben Franklin, who was the first to study the Gulf Stream, to Willard Bascom, pioneer of the Mohole project.

--Barbara Lundy

