



ANCHOVETA (PERU)

"Dynamics of the Fishery for the Anchoveta, *Engraulis ringens*, off Peru," by Milner B. Schaefer, Boletín, Vol. 1, No. 5, Instituto del Mar del Peru, Callao, 1967, pp. 189-304, in English and Spanish.

It has been known for a long time that a very large quantity of anchoveta, along the coast of Peru and northern Chile, formed the principal food for a large guano bird population and for the larger predatory fishes. The utilization for fish meal of anchoveta caught by purse-seine vessels, known in Peru as 'bolicheras,' began in the early 1950s. The fishery grew from a modest 7,000 tons in 1951 to 9.8 million in 1967. Before and during the development of the fishery, there were fears that it would lead to disastrous consequences for both guano birds and anchoveta. This concern about the proper development and control of the resource had the fortunate consequence of providing one of the few instances when adequate statistical and biological data have been collected and analyzed during the early development of an important commercial fishery.

Data on catch, effort, size composition of the catches, and information on the biology and ecology of the anchoveta have been collected. This has made it possible to insure against both overexploitation and premature curtailment of exploitation.

Dr. Schaefer has examined the population structure and biology, measurement of the catch, fishing efforts, and apparent abundance of the anchoveta. Estimating the relation of catch, effort, and catch-unit-of-effort, he has concluded the average maximum sustainable yield to be 10 million tons, divided between guano birds and man.

BLUE CRAB

"Growth of Juvenile Blue Crabs, *Callinectes sapidus* Rathbun, in the St. John's River, Florida," by Marlin E. Tagatz, Fishery Bulletin, Vol. 67, No. 2, Fish & Wildlife Service, Dept. of the Interior, 1968, pp. 281-288, illus. Available from Division of Publications, 1801 N. Moore St., Arlington, Va. 22209.

Information on crab growth is needed to estimate the time required for any particular size to reach harvestable size. This is a report on studies of growth increments, molt intervals, and the effects of salinity and temperature on juvenile blue crabs in the St. John's River, Fla. Estimates in increase-- and of width with age--indicate that most blue crabs in the river reach harvestable size (width of 120 mm.) within 1 year after hatching. Relative growth was studied by holding juveniles in anchored floats.

COMMUNIST CHINA

"Economic Aspects of the Fishing Industry in Mainland China," by Jan J. Solecki, Institute of Fisheries, Univ. of British Columbia, Vancouver, 1966, 172 pp.

The reported expansion of mainland China's fisheries to the point where she may be the second or third greatest producer in the world has naturally aroused a great deal of interest. Unfortunately, there are very few data documenting this phenomenal expansion. Mr. Solecki reviews the history of the freshwater and marine fisheries, summarizes the scattered literature available, and touches on the social and economic features affecting the resource. Most of the information has been derived from Chinese releases and may be biased to show how much fishery production has increased under communism.

DOLPHIN

"Distribution of Delphinidae (Cetacea) in Relation to Sea Surface Temperatures off Eastern and Southern New Zealand," by D.E. Gaskin, Publication No. 126, Fisheries Research Division, New Zealand. (Reprinted from 'N. Z. J. mar. Freshwat. Res.', pp. 527-34, Sept. 1968.)

Mr. Gaskin analyzes the records of 4 species of Delphinidea, in waters east and southeast of New Zealand in relation to surface temperatures. He suggests that distributions of dolphin species off the east coast of New Zealand are closely associated with certain temperature ranges and, consequently, with specific water masses and convergence regions.

HERRING

"Spawning, Distribution, Survival and Growth of Larval Herring (Clupea harengus L.) in Relation to Hydrographic Conditions in the Bay of Fundy," by Naresh Das, Technical Report No. 88, Fisheries Research Board of Canada, 1968, 156 pp., illus.

Herring, one of the most commercially abundant fish in the Bay of Fundy-Gulf of Maine area, is a source of great wealth to the Maritime Provinces and to Canada as a whole. Since changes in distribution and abundance affect the fisheries industry, a sound basis for prediction of seasonal variation of herring must be established. Prediction demands a knowledge of stock origins, its distribution and dispersal to the fishing grounds.

This report, ecological in approach, includes a general study of the spawning areas, seasonal production, distribution of larvae and young herring, survival, and growth, in the Bay of Fundy-Gulf of Maine area as far south as the northern edge of Georges Bank. Mr. Naresh Das also attempts to determine just how much hydrographic conditions influence the availability of herring.

INDUSTRY ANALYSIS

"Economic Analysis of the Commercial Fishery Industry of Georgia," by D. H. Carley, Research Bulletin 37, Georgia Game and Fish Commission, June 1968, 92 pp.

Even though the fishery industry in Georgia is not new, very little information has been published on its contribution to the State's economy. This study was undertaken to provide a basis for decision-making by the fishery industry, and by State and Federal agencies charged with administration of seafood resources. It includes analyses of investments, processing, sales, employment, and the major fisheries.

MACKEREL

"Synopsis of the Biological Data on the Pacific Mackerel, Scomber japonicus Houttuyn (Northeast Pacific)," by David Kramer, FAO Species Synopsis No. 40, Circular 302, Fish & Wildlife Service, Dept. of the Interior, 1969, 18 pp., illus. Available from Division of Publications, 1801 N. Moore St., Arlington, Va. 22209.

This synopsis is an attempt to bring together all existing knowledge on the identity (nomenclature, taxonomy, morphology), distribution, bionomics, life history, population, fishery, and protection and management of the Pacific mackerel.

MARKETING

"Analysis of Demand for Fish and Shellfish," by J. C. Purcell and Robert Raunikar, Research Bulletin 51, Georgia Game and Fish Commission, 1968, 37 pp.

This is a report based on quarterly household data gathered over 5 years. It investigates the nature and magnitude of the influence of quantifiable socio-economic variates on the demand for fish and shellfish.

NAVIGATION

"Celestial Navigation," by Frances W. Wright, Cornell Maritime Press, Cambridge, Md., 1969, 160 pp., illus., \$7.50.

Celestial navigation using the sextant, an accurate timepiece, and the 'Nautical Almanac' is still an extremely important method of navigation. This book provides a quick, easy, and thorough explanation (with realistically worked examples) of the practice of celestial navigation at sea, using simple and inexpensive equipment. The only mathematical requisite is an ability to add and subtract without making a mistake.

OCEANOGRAPHY

"Oceans," by Karl K. Turekian, Prentice-Hall, Englewood Cliffs, N. J., 1968, 120 pp., illus.

This book is an introduction to the study of the oceans, emphasizing the geologic and chemical aspects. It draws on recent data on sounding of the ocean depths and geophysical explorations of the ocean bottoms, and relates them to the geologic history of the oceans and the continents.

Covering a vast range of subjects within the field of oceanography, Dr. Turekian discusses the structure and topography of the ocean floor, the nature and transport of sediments, aspects of the Earth's history during the Ice Age as recorded in ocean-bottom sediments, the circulation and other movements of ocean water, marine geochemistry, and the origin and history of ocean water and ocean basins.

OIL POLLUTION

"Torrey Canyon' Pollution and Marine Life," edited by J. E. Smith, Marine Biological Association of the United Kingdom, Cambridge Univ. Press, 1968, 196 pp., illus.

After the release of 117,000 tons of crude oil from the tanker 'Torrey Canyon,' liberal applications of oil solvent/oil emulsifier mixtures were used to disperse the oil at sea, and to clean the rocks and beaches along 140 miles of the Cornish coast. Based on a 10-week survey, this is a report on the detergents' effect on marine plants and animals.

The investigations provided much new information about the movement of oil at sea, properties of detergents, their dispersal in the sea, and about the pollutants' effects on animals and plants at sea and on the shore.

OYSTERS

"Maturation of Gonads of Oyster, *Crassostrea virginica*, of different Geographical Areas Subjected to Relatively Low Temperatures," by Victor L. Loosanoff, Reprint, 'The Veliger,' Calif. Malacozoological Soc., Berkeley, Calif., Vol. 11, No. 3, Jan. 1969, pp. 153-163, illus.

Dr. Loosanoff describes the comparative progress of gametogenesis of oysters of dif-

ferent geographical areas kept in Milford Harbor, Conn., for approximately 3 months, and then subjected to conditioning at relatively low temperatures.

PURSE SEINE

"Designing an Improved California Tuna Purse Seine," by M'nakhem Ben Yami and Roger E. Green, FIR preprint No. 66, 11. 183-207, illus., Oct. 1968. Available from Division of Publications, 1801 N. Moore St., Arlington, Va. 22209.

In the eastern tropical Pacific, about 50% of the purse seine sets for tuna are unsuccessful due mostly to fish escaping the net during setting and pursing operations. This report describes the design of a proposed purse seine that will largely retain the desirable features of the presently used seine, but will sink faster and use increased webbing with efficiency.

SALMON

"Photographic Atlas of Sockeye Salmon Scales," by Kenneth H. Mosher, Fishery Bulletin, Vol. 67, No. 2, pp. 243-280, 1968, illus., Fish and Wildlife Service, Dept. of the Interior. Available from Division of Publications, 1801 N. Moore St., Arlington, Va. 22209.

Sockeye salmon is the most valuable species of Pacific salmon in North America. Spending their early lives in fresh water, they migrate to the North Pacific, and finally return to their natal streams to spawn and die. Growth zones form on their scales, recording the growth of each fish. The fresh and salt water zones, differing in appearance, show the years the fish spent in each environment, the year it hatched, and the year it migrated to the sea.

The atlas shows in detail the features of sockeye scales so workers can learn how to interpret them. Photographic plates of the scales, with explanatory text, illustrate variations in scale features. Examples of regenerated, resorbed, and other atypical scales have been included.

SEABASS

"Management of the White Seabass (*Cynoscion nobilis*) in California Waters," by James C. Thomas, Fish Bulletin 142, California Dept. of Fish and Game, Sacramento, 1968, 34 pp., illus.

The white seabass ranges from Juneau, Alaska, to Magdalena Bay, Baja California. Sport and commercial fishermen esteem it for both prestige and monetary value. A general history of declining and erratic catches in the 1950s indicated that the resource was not stabilized, despite regulations designed to achieve a consistent and relatively high yield.

This is a report on the relative abundance, rate of growth, and age and size composition of the resource. It includes an estimate of survival and mortality rates, and evaluates current management practices in sport and commercial fisheries.

SEAWATER ANALYSIS

"A Practical Handbook of Seawater Analysis," by J.D.H. Strickland and T.R. Parsons, Bulletin 167, Fisheries Research Board of Canada, Ottawa, 1968, 311 pp., illus., C\$7.50. Sold by Queen's Printer, Ottawa, Canada.

Intended to be an authoritative reference on seawater analysis, this book provides full working instruction for procedures, found reliable in the laboratory and at sea, that have a sensitivity and precision adequate for most marine ecology studies. In most cases, the methods can be mastered by relatively inexperienced workers.

Although a measurement of the photosynthetic potential of a sample of seawater, or of the growth rate of suspended matter, is not strictly seawater analysis, these determinations are becoming increasingly important in many marine laboratories. A short section on some basic procedures has been included.

TANNER CRAB

"A Few Studies on the Ripeness of Eggs of Zuwaigani, *Chionoecetes opilio*," by Katsuchiyo Ito, translation from 'Bull. Japan. Reg. Fish. Res. Lab.,' Vol. 11, pp. 65-76, 1963, and "Fisheries Biology of the Tanner Crab. II-On the Frequency of Molting," by Tohshi Kon, Masakazu Niwa and Fumio Yamakaea, translated from 'Bull. Japan. Soc. of Sci. Fish.' Vol. 34, No. 2, pp. 138-142, 1968.

Translation Series Nos. 1117 and 1129, respectively, Fisheries Research Board of Canada, Biological Station, St. Andrews, N.B., 1968.

TUNA

"Age and Growth of the Yellowfin Tuna (*Thunnus albacares*) in the Pointe-Noire and Dakar Regions (West Africa)," by J.C. Le Guen and C. Champagnat, Doc. No. 431 S.R., Office de la Recherche Scientifique et Tech-

nique Outre-Mer, Centre de Pointe-Noire, Oceanographic, 1968, 22 pp., translated by John P. Wise. Translation No. 19, Tropical Atlantic Biological Lab., BCF, Miami, Fla., 1969.

UNDERWATER ACOUSTICS

"Seasonal and Diurnal Occurrences of Fish Sounds in a Small Florida Bay," by Charles M. Breder Jr., Bulletin of the American Museum of Natural History, New York, 1968, Vol. 138, Art. 6, pp. 325-378, illus., \$2.

With the development of simple and easily handled equipment, suitable for use by other than electronic specialists, studies involving underwater acoustical activity have advanced rapidly. Very little work on soni ecology and its relation to the life history and behavior of any species has been reported. The primary purpose of this study was to provide preliminary background data on acoustic activities of certain shore fishes.

WHALES

"Sperm Whales of the Southeast Pacific," by Robert Clarke, Anelio Aguayo L., and Obla Paliza, Hvalradets Skrifter, No. 51, Det Norske Videnskaps-Adademii Oslo, 1968, 80 pp., illus.

In a stock exploited by whaling, the size distribution of the catch is not apt to be of value as a racial characteristic, but external characters and dental formulae may give useful information on stock limits. This paper describes the Southeast Pacific sperm whale stock in terms of the variation of these characters, and attempts to compare this variation with published results from other stocks where appreciable numbers of whales have been examined.

WORLD FISHERIES

"Yearbook of Fishery Statistics--Catches and Landings, 1967," Vol. 24, Food and Agriculture Organization of the United Nations, \$6. Sold by the National Agency for International Publications, 317 E. 34th St., New York, N.Y. 10016.

The Yearbook tables cover the catches or landings of all fish, crustaceans, molluscs and other aquatic animals, residues and plants, made by commercial and subsistence fishermen in freshwater and marine areas. Statistics are given by continents, countries, regions, fishing areas, and species.

--Barbara Lundy