



ANTARCTIC

'An Ostracod Fauna from Halley Bay, Coats Land, British Antarctic Territory,' by J. W. Neale, British Antarctic Survey, Scientific Report No. 58, London, 1967, 50 pp., illus., \$3.36.

Twenty-six species of podocopid ostracods are present in a high Antarctic fauna obtained from Halley Bay. Diagnoses are given of the two new genera 'Antarcticythere' and 'Myrena.' The new species 'Cativella benesone,' 'Loxocythere frigida' and 'Robertsonites antarcticus' are described. Comparisons are made with other described fauna from the Antarctic.

MARINE MAMMALS

'The World of the Walrus,' by Richard Perry, Taplinger Publ. Co., New York, 1967, 162 pp., illus., \$5.95.

For a thousand years, since the days when the Vikings were hunting the hvalross, or whale-horse, off the North Cape early in the ninth century, man has persecuted the walrus relentlessly. During the past 100 years, between 2 and 3 million walruses have been slaughtered in the Bering Sea alone; no one has calculated how many more in the Canadian and Norwegian Arctic. By the 1930s, their world population was less than 100,000; their continued existence as a living species was endangered.

Despite this record, our knowledge of the walrus life history is both fragmentary and confused. It is extremely difficult to maintain contact with the herds among the remote icefields, and they do not breed ashore in vast rookeries as do their relatives, the fur seals and sea lions. Nevertheless, a mass of material has been gathered by zoologists, much of it both circumstantial and contradictory. Mr. Perry has straightened out this maze of

fact and inference to expose the unexpected fact of walrus life and society.

MODERN FISHERIES

'Science for Better Living,' Yearbook of Agriculture, Dept. of Agriculture, 1968. U.S. Govt. Printing Office, Washington, D.C., 386 pp., illus., \$3.

This Yearbook takes a very broad view of agricultural research. Subjects range from the alfalfa bee to the weed-eating sea cow, from balloon logging to WURLAN wool fabric, from a low-calorie cheese to farming by space satellite.

The intricacies of managing fishery resources and harvesting food from the sea and inland waters are covered in a chapter written by Dr. Sidney Shapiro, BCF's special assistant for resource development. It deals with numerous modern developments in fishery biology and technology: for example, productivity of the sea, underwater marine research, spacecraft oceanography, and fish culture.

OCEANOGRAPHY

'The Ever-Changing Sea,' by David B. Ericson and Goesta Willin, illustrated by Ingrid Niccoll, Alfred A. Knopf, New York, 1967, 349 pp., \$7.95.

Revelations of the past two decades about the oceans--their deeps, currents, topography, and their origins--have given us more knowledge than had been acquired in all the millenia since venturesome upper-paleolithic men first set out upon the deeps in skin boats. David Ericson and Goesta Willin, themselves distinguished oceanographers, have brought the story up to date.

They tell how new equipment and ingenious instruments, such as the echo sounder, the

corer, and the seismic profiler, have brought to the surface data that give an utterly new view of the sea's secrets. From this new knowledge has come an understanding of other fields of learning. This book illustrates how the study of the sea and its terrain has given insights into the physical evolution of the earth itself, evidence about the formation of continents, the nature of the earth's crust, the beginnings of life, life in the great depths today, and the 'new economics of the oceans.'

'Oceanography of Baffin Bay and Nares Strait in the Summer of 1966 and Current Measurements in Smith Sound, Summer 1963,' by Kennard M. Palfrey, Jr. and Godfrey Day, U.S. Coast Guard Oceanographic Report No. 16, U.S. Govt. Printing Office, Washington, D.C., 1968, 204 pp., illus.

The summer of 1966 climaxed the most unusual year in the history of the International Ice Patrol, by virtue of a phenomenal lack of ice and abnormally warm temperatures. This report attempts to document the oceanographic conditions in Baffin Bay at that time, including data collected during a comprehensive and synoptic investigation of Baffin Bay and Nares Strait. Measurements of temperature, salinity, and dissolved oxygen are presented, emphasizing the development of the circulation of Baffin Bay.

OCEAN BIRDS

'Birds of the Atlantic Ocean,' by Ted Stokes, illustrated by Keith Shackleton, Macmillan Co., New York, 1968, 156 pp., \$12.95.

This book offers the most complete collection of illustrations of ocean birds ever published. The celebrated British painter and illustrator Keith Shackleton has included reproductions of 15 of his oil portraits of birds of the Atlantic ocean in full flight. To these have been added 23 plates of gouache drawings pointing up each bird's distinguishing characteristics and features of special interest.

The birds run the full gamut from penguins, albatrosses, petrels, tropic birds, and pelicans to cormorants, frigate birds, phalaropes, skuas, gulls, terns, skimmers, and auks. Mr. Stokes, a well-known oceanbird enthusiast, presents the birds in correct systematic sequence, giving their order, family, species, and common names.

OIL POLLUTION

'Manual on the Avoidance of Pollution of the Sea by Oil,' Great Britain Board of Trade, London, 1967, 22 pp., 2 charts. Her Majesty's Stationery Office, 30¢.

In recent years, strenuous efforts have been made, both nationally and internationally, to solve the problem of oil pollution. By November 1967, 36 countries had accepted an International Convention for the Prevention of Pollution of the Sea by Oil. The provisions of the Convention have been given legal effect for British ships registered in the U.K.

The law can impose penalties, but pollution of the sea will cease only if every master, officer, and seaman--and those on shore who transfer oil to and from ships--do all they can to prevent oil getting into it. This manual seeks to assist them by setting out methods of avoiding the discharge, spillage, or leakage of oil.

FISH PASSAGE THROUGH TURBINES

'Diel Movement and Vertical Distribution of Juvenile Anadromous Fish in Turbine Intakes,' by Clifford W. Long, Fishery Bulletin, Vol. 66, No. 3, Fish and Wildlife Service, Dept. of the Interior, 1968, pp. 599-609, illus. Available from Division of Publications, 1801 N. Moore St., Arlington, Va. 22209.

The behavior of fingerling salmonids in turbine intakes, including their time of passage and distribution in the water mass, can profoundly influence development of efficient and economical methods for reducing fish mortality in turbines. The need for fish protection at dams is becoming particularly acute in the Columbia Basin because the progeny of upriver stocks of salmonids soon will be forced to pass through the turbines of 8 to 10 dams to reach the sea. This paper reports on experiments at 2 dams on the Columbia River to acquire data on timing and distribution of fingerling salmonids entering turbine intakes.

'A Compendium on the Success of Passage of Small Fish through Turbines,' by Milo C. Bell, Allen C. DeLacy, Gerald J. Paulik, and Richard A. Winnor, Fisheries Engineering Research Program, U.S. Army Engineering Division, North Pacific Corps of Engineers, Portland, Ore., May 1967, 268 pp., illus.

Hydroelectric development on watersheds containing indigenous populations of anadromous fish causes concern for the safety of juvenile forms that must pass through penstocks and turbines on their way to the sea. Many investigations have been undertaken over the years to determine levels of turbine mortality and the causative factors at specific projects. This report presents an analysis of existing information and makes recommendations for future work.

ANIMAL NAVIGATION

'Animal Orientation and Navigation: Proceedings of the 27th Annual/Biology Colloquium, Mar. 6-7, 1966,' edited by Robert M. Storm, Oregon State Univ. Press, 1967, 134 pp., illus.

This book records a conference held to bring together several active researchers in vertebrate orientation and navigation so that they might present a timely review of accomplishments and remaining problems.

Dr. Arthur D. Hasler reviews his research on fish orientation, stressing their use of olfactory and visual clues. Dr. Denzel Ferguson discusses sun orientation by frogs and toads. Dr. Archie Carr reviews research on sea-turtle orientation and navigation. Dr. Kenneth S. Norris reviews the known migrations of marine mammals and the navigation problems involved, the known orientation mechanisms, and he speculates on others that may be operative. Other papers discuss certain aspects of migration by birds.

PARASITES

'Some Parasites of O-Group Plaice, *Pleuronectes platessa* L., under Different Environmental Conditions,' by K. MacKenzie, Dept. of Agriculture and Fisheries for Scotland, Marine Research Report No. 3, 1968, 23 pp., illus., \$1.40. Her Majesty's Stationery Office, Edinburgh.

The parasites of O-group plaice, living under artificial conditions in open-mesh submerged tanks in a sea loch on Scotland's west coast, are compared with those of the natural population of O-group plaice in the same loch. From the 263 plaice examined in this study, 19 species of parasites were recorded.

The report gives data on the incidence and intensity of infestation of each parasite. It

discusses the potentially harmful parasites of young plaice under intensive fish-farming conditions.

PLANKTON

'Dinoflagellates of the Caribbean Sea and Adjacent Areas,' by E. J. Ferguson Wood, Univ. of Miami Press, 1969, 144 pp., illus., \$12.

Dinoflagellates, microscopic, single-celled, plantlike organisms, form a significant element among the plankton. They are important in marine food chains and are of interest to marine biologists and to researchers in many other fields.

Students of the Caribbean region ecology, and even nonspecialists in marine microbiology, will be able to identify specimens of dinoflagellates found in plankton catches by using this atlas and guide. Dr. Wood describes and gives locations for 400 species. The detailed illustrations are particularly useful for identification purposes. There is an appendix treating the 6 species of Silicoflagellates that have been recorded in the Caribbean.

PROCESSING

'Sanitation Guidelines for the Breaded-Shrimp Industry,' by Joe P. Clem and E. Spencer Garrett, 14 pp., illus., Circular 308, 1968. Fish and Wildlife Service, Dept. of the Interior. Available from Division of Publications, 1801 N. Moore St., Arlington, Va. 22209.

The ever-increasing application of technology by the food-processing industry makes the sanitation measures used some years ago inadequate. As processing becomes more complex and sophisticated, so do the sanitation problems. Large numbers of workers standing along the processing lines handle the product. If any one of them is guilty of the slightest hygienic malpractice, he may contaminate the product and affect the health of hundreds of consumers.

The solution lies in rigid control of plant sanitation. Sanitation-control measures are not merely cleaning procedures. They involve all procedures ensuring that a finished product will reach the consumer in the best possible condition. The guidelines cover physical plant requirements, cleaning procedures, operating procedures, and the need for personal hygiene.

SEA URCHINS

'Systematics of Sympatric Species in West Indian Spatangoids: Studies in Tropical Oceanography No. 7,' by Richard H. Chesher, Univ. of Miami Press, 1968, 168 pp., illus., \$12.

Sea urchins have long excited the interest of zoologists and paleontologists. Spatangoid sea urchins are important links in the recycling of nutrients trapped in sediments and provide food for a great variety of marine life. They burrow in sand or mud, from just below low tide mark out to great depths. Marine fossil deposits often contain large numbers, but the burrowing habits that ensure their entombment also effectively protect them from the eyes and dredges of marine biologists.

Dr. Chesher's study deals with ten species and subspecies belonging to four genera. Three of the species are new to science. Each species is described, measured, and mathematically analyzed in detail, establishing on a firm basis the systematics and biology of this previously poorly known group.

The book should prove invaluable to marine biologists and ecologists, to those interested in the biology and evolution of echinoderms, and to museum workers concerned with accurate identification of species.

VENEZUELA

'The Present Status of the Sardine and Tuna Fisheries of Venezuela,' by Raymond C. Griffiths and John G. Simpson, FAO Fisheries Research and Development Project,

Caracas, 1968. (Reprinted from 'Proc. of Gulf and Crib. Fish. Inst.,' Nov. 1967, pp. 159-177, illus.)

In contrast to the relatively primitive sardine fishery, the tuna fishery is one of the more advanced in Venezuela. This report briefly describes each fishery showing the catch, fishing effort, and the relation between them. Specific components of the catch, seasonal migrations, dependence of school size on population density and new fishing methods are discussed.

Griffiths and Simpson also consider the possible difference between the two main fishing areas and the migrations of fish between them, the effects of upwelling, and the low radius of action of the fleet.

CHROMATOGRAPHY

'Quantitative Thin-Layer Chromatography of Chlorophylls and Carotenoids from Marine Algae,' by S. W. Jeffrey, CSIRO, Australia, (Reprinted from 'Biochim. Biophys. Acta.,' Vol. 162, No. 2, pp. 271-285, Aug. 1968.)

A quantitative chromatographic method for determining microgram quantities of chlorophylls and carotenoids in planktonic marine algae has long been needed. This is a report on a chromatographic method that separates each pigment fraction for quantitative analyses and that can also be used to test the validity of spectrophotometric equations used for chlorophyll analyses in marine algae and in higher plants. Mr. Jeffrey describes the preparation and properties of the sucrose thin-layer plate, the quantitative procedures used, and some applications of method.

--Barbara Lundy

