OCEANOGRAPHY
AN ANNOTATED BIBLIOGRAPHY
of
INTERMEDIATE LEVEL RESOURCES

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Senior Honors Thesis
March 3, 1969

The Library
Ball State University
Muncie, Indiana
INTRODUCTION

In this modern age of space exploration, many people tend to overlook one of the great uncharted areas of our earth - its oceans. Most school children have an avid interest in outer space and the space program, but how many are aware of the current oceanography programs?

I decided to do some research in the field of oceanography to see what sources are actually available for the school child. I found many good materials, the best of which I have included in this paper. The list is by no means complete and, of course, the teacher cannot use all of the sources and must choose those most appropriate to her unit. All the sources included were geared to the intermediate grade levels and, for the most part, were published from 1960 on.

I would like to thank Mrs. Helen Kirby for her help in compiling this bibliography. Also, I would like to thank the Teaching Materials Service and the Film Service of the Ball State University Library for their help.

It is my intention that this unit will be of help to the imaginative teacher who wants to interest her children in our earth as well as outer space.

Julia Banwell
March 3, 1960
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THE OCEAN AND ITS EXPLORATION


Explains for the young reader the theories of the formation of the sea, its coral and volcanic islands, the tides, waves and ocean currents, plant and animal life, the science of oceanography, and the resources which the ocean may hold for future generations.


There are many things happening in the sea, such as telerhoning under water, drilling for oil, looking for pirate treasure and many other interesting things.


This book, illustrated with photographs, tells of the exploration by helmet and Suba divers, by bathyscaphes and submarine. Describes scientific research of seafaring oceanographers and discusses the equipment and methods they use.


The author tells how the sun and moon draw up the oceans to produce the tides and their amazing variations in height and depth, how tides are measured and predicted, how men made use of them in the past and may in the future, and how the earth and air too are subject to tidal motion.


Introductory book on the ocean. Explains characteristics of the earth's oceans and their relationship to all life on earth. Describes vast ocean bottoms and marine, vegetable and animal life from the microscopic to the largest specimens.


The story of the origin of the sea, its change through the ages, and interesting aspects such as tides, ocean currents, sedimentation, marine life, and island formation.


Discusses particular oceans, noting motion, life and unusual features.

Background material on periodic rise and fall of tides, causes of hurricanes and tidal waves. Recent developments in using resources of the ocean.


Stresses importance of vast underwater area not only for its food, water, power and mineral resources but also as a potential living and working space for man. Describes various devices now available for exploration and experimentation.


An account of underwater diving—methods and equipment. Traces the development of the submarine, diving bells, and bathysphere.


Beginning with the formation of the ocean before the invention of life, this introduction to the science of oceanography points up the importance of oceans to man and describes the ongoing research being conducted.


A chronological history of America and her conquest of the sea. Many good color pictures.


The development of underwater exploration from Henry the Navigator's interest in oceanography to Piccard's descent 35,000 feet below the surface of the sea.


Information on the topography of the sea bottom, the action of waves and tides, and other aspects of the physical dynamics of the sea. Interesting and spectacular inhabitants introduced and a discussion of future role of the sea's resources in the life of man.


From observations in a walk along a beach to modern oceanographic research, this is an attractive introduction to the sea's systems, features and wonders.

The story of man's attempts to learn about the ocean, the submarine mountain ranges, plateaus, river-like currents, animal life, and mineral riches.


Describes physical characteristics of the world under water—the continental shelf and slope, ridges and trenches. Some vehicles and instruments used to explore and chart the ocean.


Covers history of underwater exploration, physical aspects and plant and animal life of the ocean, and present-day projects as well as projected plans for future scientific study.


Tales of pirate raids, unexplained naval maneuvers, disappearances at sea, and shipwrecks including the mystery of the Mary Celeste, the struggle to save the Flying Enterprise and the disappearance of Amelia Earhart.


A beginning study of oceanography. acquaints the young reader with past and present research, underwater archaeology, biology, and the importance of the sea for the future.


Informative overview of the Navy's current undersea exploration program and a detailed account of the Sealab II experiment off the coast of La Jolla, California, in 1965.


An account of one of today's most exciting marine vehicles...a free-roaming submersible and advanced tool in man's attempt to investigate at various depths the diverse aspects of the marine world.

A brief resume of early scientific studies of the sea. Extensive report on contemporary research in undersea geography, ecology, plant and animal life, and natural resources.


Examines modern research and findings in the science of oceanography. Topics include the deep sea, the ocean floor, fishing and whaling, oil and minerals.


Biographies of Haller, Bache, the Plymards and 10 other famous pioneers in the conquest of the underwater world. All are important figures in the history of the submarine, diving bell, and free diving.


A simple account of waves, their origin, character, description, and the natural forces that modify them. Gives different techniques to measure waves.

**ANIMALS OF THE OCEAN**


An introductory book with an amazing amount of information about familiar and unusual fish; what they look like, where they live, how they eat, and how they reproduce.


A good reference source which covers thoroughly plants and animals of the sea. The appendix discusses man and the ocean, ocean national parks, animals facing extinction, etc.


A beginner's collection of miscellaneous facts about fishes, with fragmentary information on their history, and distribution. Interspersed reading which introduces the young reader to many of the most substantial and authoritative books.

Tells about the dolphin and the ways things they can be taught to do. Tells how the dolphin can be of help to man.


Beginning with a brief discussion of the whale family, the authors describe the biology, habits, and appearance of the humpback and the largest killer of the animal kingdom, and offer numerous true stories of their sometimes perilous encounters with them.


A brief discussion of evolution of whales. Describes the characteristics and behavior of the sperm whale, tells numerous legends and stories associated with this famous hunting whale, and gives a brief sketch of whales' development from ancient times to the present.


Over 40 examples of strange shapes and habits to be found among salt-water creatures. Includes anglerfish, angelfish, sea snakes, eel, eel, and sea horses plus others.


Beginning with a geological timetable of the evolution of fishes, this little book presents an elementary introduction to ichthyology, and communicates some of its lore and fascination.


Discusses some of the different things that happen at the beginning of spring in the ocean. Focuses on different animals, information taken in shore form.


The adventures of a baby dolphin and his hand are combined with a discussion of their probable intelligence and the research now being conducted with them. A warm and appealing introduction to these remarkable creatures which conveys much information in a style which is understandable but rarely oversimplified or condescending.

A fairy simple story of the life and habits of the tiny sea horse. Their physical structure, locomotion, and how to keep them as pets.


An introduction to starfish—feeding, life cycle, structure, power generation, and characteristics. Information is concise and authentic with an emphasis on personal discovery.


Gives an inside view of oceanarium, its function, personnel and capture, care and training of its inhabitants.


Basic facts about habits of whales, with an emphasis on the life cycle of the humpback whale. Excellent illustrations.


Discusses the dolphin in its natural habitat and in captivity—its habits, friendliness, intelligence, and evolution. Includes the work being done with the behavior and song of dolphins, as well as many examples of their friendship with people, especially children.


Discusses different classes of animals in the sea from the smallest to the largest in slow form.


The "food" of the sea is made up of varied microscopic and semi-microscopic plant and animal forms known collectively as plankton. This is a child's introduction to these living food of much of marine fauna, which one day may serve man, too, as a direct source of nutrition.


An authoritative account of fish, ranging from goldfish to sharks, with some practical information on aquariums.

Whales and their relatives—seals, walruses, and sea cows—are all shown to be mammals which once lived on land. Explains how whales breathe, stay warm, and eat, and gives a short history of the whaling industry.


Lively compendium of information about whales. Includes anecdotes, data about the anatomy, evolution, history, habits and behavior, and courtship and reproduction of whales. Also a description of scientific research being done with dolphins and whales.


Valuable to the youngster who wants to keep an aquarium. The first three chapters tell how to collect salt water specimens, gives interesting facts about salt water life and tells how to set up and maintain a salt water aquarium. The last three chapters are a counterpart dealing with fresh water life.


Various forms of life found in the ocean depths are introduced to younger readers by means of a brief, scientifically accurate text and effective illustrations.


After explaining the cause of tides, the author goes on to describe primitive life to be found in tide pools, under such headings as protozoa, annelids and mollusks.


A brief description of the evolution of sharks. Describes characteristics, breeding, and uses man has found for sharks.

**SEASHORE LIFE**


An outstanding pocket handbook for identification of sea shells. Besides colorful and accurate pictures and descriptions, it offers the beginning valuable information and suggestions about shell collecting and about mollusks in general.

Shells of the four common classes of mollusks are described briefly. Each is accompanied by illustrations, over half of which are in color.


Plants and animals which live along the shore. Also, common fish and birds. Good, concise information.


Many suggestions about shell collecting are given for the novice. Includes items such as where to find shells, how to carry them, how to prepare them, and how to classify them. The second portion contains pictures of and information about some specific shells.


A guide to collecting and identifying various forms of sea life including seaweed, shells, coral, sponges, crabs, starfish, fossils, etc.


A science hobby book—exploring, observing, and collecting of small animals and plants at water's edge, on beach or shore and in tide pools.


An account of a community of plants and animals that forms the living reef. Explains types of reefs.


An account of the fascinating array of animals that live at the edge of the sea--on the tide-washed rocks, in the rolling surf, hidden in the wriggles of seaweed. Each chapter contains enough detail to provide definite knowledge.

Answers questions that arise when a child goes to the seashore, and suggests some things he can do while there. Queries such as why driftwood burns different colors, why the tides come and go, and why waves flow at night, and some plants and animals of the shore are pictured.


Describes some common animals which live at the edge of the sea, showing how they find food, protect themselves and move about. Colorful and appealing photographs.


Describes appearance, structure, and habits of different types of coral animals and discusses the formation of coral reefs and atolls in the light of known facts and scientific theories. Also notes many forms of sea life which live in and around coral reefs.
Animal Life at Low Tide, Pat Dowling Pictures, 11 min., color.

A boy and girl visit the seashore and, at a tidepool, find and study many salt-water animals and their means of locomotion, protection, and food gathering. Includes starfish, tube-building sea worms, sea anemone, limpet, sea urchin, sand crab, and snail.


Presents discussion questions: Where does sand come from? Where does sand go? Uses underwater photography, and experiments with beach models to show the movement of sand.

Beach and Sea Animals, Encyclopaedia Britannica, 11 min., color.

Illustrates and explains characteristics and importance of invertebrate animals living on or near the beach.

Birds of the Sandy Beach: An Introduction to Ecology, Film Associates, 10 min., color.

Discusses birds on the beach, and their adaptations which make them all different.


Relates story of Project Mobole from its beginning to its final drillings in the Pacific. Presents methods of operations and findings of the project.


Shows detailed closures of the remarkable variety of life forms in a tropical sea. Stresses various fish adaptations which aid survival.


Explains how over long period of time, the calcium secretions of tiny tropical organisms called corals form rock-hard reefs, such as Australia's Great Barrier Reef.

The Deep Frontier, Kelco Company, 28 min., color.

Discusses man's knowledge of the waters of the earth and shows technical equipment used by Scripps Institute of Oceanography and the U.S. Navy to explore ocean depths.
### Earth's Oceans

Explore the changing patterns of the ocean's surface, the tides and nonlinear tides in the waters, the nature of the ocean floor, and the influence of the oceans on man.

**Exploring the Ocean, National Film Board, 30 min., color**

A Documentary film featuring photography shot over 200 ocean expeditions, photographs at extreme depths, maps of ocean floors, and evidence these sleeper-like creatures and minerals are found in the open sea and their economic importance.

### Life in the Sea

**Life in the Sea, Film Associated of California, 30 min., color**

Present an overview of plants and animals of the sea, emphasizing their relationships to each other, to the environment, and to similar life on land.

**Life in the Sea, Encyclopaedia Britannica, 11 min., color**

Shows models of marine animals—their habitats, habitats, and causes of survival. Tells of useful products obtained from sea. Contains sizes of ocean life in electron micrographs, life and microscopic plant life.

**Marine Life, Encyclopaedia Britannica, 11 min., color**

Depicts some of the colorful forms of animal life found under the sea. Includes octopuses, sea anemones, hermit crabs, starfish, sea urchins, eels, fish, barracuda, sharks, porpoises, etc.

### Ocean Tides (Bay of Fundy)

**Ocean Tides (Bay of Fundy), Encyclopaedia Britannica, 15 min., b/w**

Explains by animation how tides are caused and pictures the unusual tides in and near the Bay of Fundy. Points out how tides influence people who live near oceans.

**Oceanography: Science of the Sea, Film Associated of California, 11 min., color, 1959**

Views of the surface of the ocean begin the description of the sea and instruments who study the sea. Ocean floor is surveyed and instruments are used to determine depths, contour of the floor and temperature and water currents.
Geology (Primary Geography Series). Supplement, 11 min., color.

Explains that oceans are one of the most important features upon which are the source of rain and snow, furnish fish for food, and make it possible for ships to carry produce and people.


Introduces children to vast food sources for all marine life and the microscopic animals and larvae which feed on planktonic plants. Also presents increasing importance plankton has had for man.


Identifies and describes the physical and behavioral characteristics of different types of mollusks. Provides suggestions for collecting, identifying, and arranging shells in collections.

Seashore Life, Encyclopaedia Britannica, 10 min., color.

Portrays life on three kinds of seashores - sandy beach, rock pool, and mud flat. Shows how animals adapt to live in their special environment.

Seashore Critters, Standard Oil Co. of California, 22 min., color.

Catches color and fantastic beauty of many strange and fascinating animals that live in the fathom between the tides along the Monterey coastline of California.

The Smithsonian Whale, Smithsonian Institute, 15 min., color, 1963.

Documents construction of the blue whale exhibit in the Smithsonian. Highlights importance of the blue whale to man.

Tides of the Ocean (What They Are and What Causes Them), Academy Films, 15 min., color.

Shows how ocean tides affect the work of fishermen, the docking and departure of ships, and other activities along an ocean. Uses animation to explain how tides are created.

Waves on Water, Encyclopaedia Britannica, 15 min., color.

Even though wave forms travel at a good rate of speed, the water does not move. By using experimental tanks, wave refractor (waves approaching shore head to conform to coastline) is explained.
He Explore Ocean Life. Coronet Films, 11 min., color.

Explores coral reefs and ocean floor. Shows how living things depend on one another, how they get their food, and how they protect themselves.

He Explore the Beach. Coronet, 11 min., color.

Shows scenes of animal life along the beach. Answers questions about lighthouses, tides, shells, clams, and other shore animals.

What's Under the Ocean. Film Associates of California, 14 min., color, 1965.

Uses animation, models, and live action photography to picture the methods used by man to explore ocean depths. Touches on a few plants and animals.

FILMSTRIPS


1) Collecting Plants and Animals by Ship, 35 f.s., color.\nDetails equipment and collecting activity on a marine lab ship.

2) The Earth and the Sea, 32 f.s., color.\nStudy of oceans, showing the structure of the earth and origin of ocean water.

3) How the Sea is Studied, 33 f.s., color.\nIllustrates ships and scientific structures used to study the sea.

4) Life Along the Shore, 30 f.s., color.\nStudy of animals which live along the shore.

5) Marine Invertebrates, 37 f.s., color.\nIllustrates various invertebrates of the sea—whale, eel, shark, ray, mussel, and walrus.

6) Waves, Tides, Currents, and Water, 30 f.s., color.


Describes riches found in oceans and research techniques for recovering mineral resources. Discusses ocean tides and currents.


Shows main characteristics of fish. Shows fish and other animals in the sea. Includes coral, sponges, shellfish, etc.
Answer several questions: Why live to the ocean? How is climate related? What kinds of life are there in the ocean? What is the floor like? What is below the floor? What is the future of oceanography?


Uses art work to depict methods of studying the ocean and its resources. Explain the need for utilizing the oceans' food and mineral supply.

- Characteristics of Sea Water—56 fms., color.
- Currents, Waves and Tides—56 fms., color.
- Life of the Open Seas—56 fms., color.
- The Ocean Basins—12 fms., color.
- Study of Oceans—12 fms., color.
FREE AND INEXPENSIVE MATERIALS

BOOKS

Fish and Wildlife Series - series of pamphlets - free
U. S. Department of Interior, Fish and Wildlife Service,
Washington, D.C. 20240. Titles include:
- America's Rare Sea Animals
- Our Commercial Fisheries
- The Sea
- Seaweeds are not Weeds

Abbott, R. Tucker. How to Know American Marine Shells, New
American Library, 1301 Avenue of the Americas, New York, New

Lindsay, Barbara. Lobsters of the Sea, Scholastic Book Services,
50 West 44th St., New York, 10036, 1962, 35c.

Lugne Stonebooks. Chicago National History Museum, The Rock
Shop, Roosevelt Road and Lake Shore Drive, Chicago, Illinois,
60605

Whales, 1961, 25c. Description of different kinds of whales,
their habits and their uses to man.

Wonder Books of How and Why. Wonder Book, Inc., 1100 Broadway,
New York, New York, 10010. 50c. each. 50c a piece.

Fish, 1963. Story of gradual development of life in the sea
and changes that led to the development of fish families.
Sea Shells, 1961. Describes major groups of shell animals and
tells about their habits.
Oceanography, 1962. Emphasizes importance, function, compo-
sition, resources, and sealife of the world's oceans and
how modern technology is applied to tap their unlimited
riches and powers.

New York, New York, 10016

Frontiers of the Sea. (MP26), 1960, 316p., 60c.

CHARTS

Oceanography Chart. Scott, Foresman and Company, College Depart-
ment, 3145 Flatsbush Road, N.E., Atlanta, Georgia, 30305.

Single copy free. Ocean Depths Chart, 22" X 38", color. Shows
life at different depths and topographical characteristics of the
ocean floor.
FREE TIME


Join the International Indian Ocean expedition in 1948. Share collection of data relating movement of ocean currents, marine life, and other scientific survey of ocean life.


Presents history of the development of oceanography as a science and its importance to the mission of the Navy today.

Geographic Chart of the Navy Reports, (US-1006A), 1966, 16 min., sound, 20 min. United States Department of Navy, (address above)

Pays full on the latest developments in the field of oceanography.

The Dustless Ski, 1966, color, 16 min., sound, 20 min. Bell System Telephone Company (contact local office), pay return postage.

Contacted animation and live photography to describe the challenge conquering men in the sea. Discusses freeze in, green temperature, movement, noise of ships, and times of life from in the sea.


Illustrates the challenges and promises inherent in the study of oceanography.

Sea Lab, (US-100100), 1965, 16 min., sound, 20 min., color. Department of Navy, (see address above).

Shows the Navy's exploratory attempts to apply laboratory studies of man's ability to live and work in an artificial atmosphere at depth of 500 feet for prolonged periods of time.


True story of recent pioneering effort of Captain Jacques-Yves Cousteau to show man can survive and function at seemingly impossible ocean depths for prolonged periods of time.
**MISCELLANEOUS**

*Bathyscape*, color film, 16mm. Film Associates of California.

Animation used to show construction of the bathyscape *Trieste,* and the function of the various parts during a dive. The dive is also seen in live action.

**Coral Reef Life (Slides)** Creative Enterprises, 1965

100 slides, color, 2" x 2"

Includes study guide. Good quality slides of corals, sponges, and fish of the ocean.

**Sea Life Study Unit,** T. N. Hubbard Scientific Company, 5235 Ravenswood, Chicago, Illinois 60640, 1967, $2.5

Includes lesson plans, sea life environment chart to see where specimens might be found, collections of shells and sea specimens, and instructor's reference guide.

**Tide Pool Marine Life** - a picture series - Audio Visual Enterprises, P. O. Box 6662, Los Angeles, California, 90062.

*What Is Oceanography?* Series of illustrated study questions, 1962

Produced by Community Educational Resources, Department of Education, San Diego County in cooperation with the U. S. Navy Electronics Lab, San Diego, California. Order from Communicative Arts, P. O. Box 11017, San Diego, California, 92117.


**Life in the Sea,** Instructional Aids, Inc., Owatonna, Minnesota.

12 plates, color, 1967.

Shows examples of mollusks, fish, birds, starfish, shells, etc.

**Tools of Oceanography,** Instructional Aids, Inc., 6 plates, color.
BIBLIOGRAPHY


Educational Motion Pictures, University of Arizona Bureau of Audiovisual Services, University of Arizona Press, Tucson, 1969.


Film Associates Catalog, Film Associates of California, 1968.


