

Books of the Week

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ATLAS OF CROSS SECTION ANATOMY OF THE BRAIN: Guide to the Study of the Morphology and Fiber Tracts of the Human Brain—A. T. Rasmussen—*Blakiston*, 66 p., illus., \$5.00. This atlas for students and specialists is based on the fifth section of Emil Villiger's "Brain and Spinal Cord," 14th edition.

BIRDS OF NEGROS ISLAND—Austin L. Rand—*Chicago Natural History Museum*, 25 p., paper, 30 cents. Rare birds found by Silliman University, Philippines, and the Chicago Natural History Museum.

CHECK LIST OF FOSSIL INVERTEBRATES DESCRIBED FROM THE MIDDLE DEVONIAN TRAVERSE GROUP OF MICHIGAN—Erwin C. Stumm—*University of Michigan Press*, 44 p., paper, 75 cents.

COLLEGE ZOOLOGY—Robert W. Hegner and Karl A. Stiles—*Macmillan*, 6th ed., 911 p., illus., \$6.00. Users of this standard text in zoology will welcome this revised edition with improved illustrations, a wider geographic range of animals and an extensive glossary.

COMPARATIVE PSYCHOLOGY—Calvin P. Stone, Ed.—*Prentice-Hall*, 3rd ed., 525 p., illus., \$8.00. Revision of this well-known text book to keep it up-to-date on the specialized aspects of genetics, neurophysiology, and endocrinology.

CURRENT SCIENTIFIC RESEARCHES IN MELLON INSTITUTE, 1950-1951—*Mellon Institute*, 52 p., illus., paper, free upon request to publisher, 4400 Fifth Avenue, Pittsburgh 13, Pa.

A FLIER'S WORLD—Wolfgang Langewiesche—*McGraw-Hill*, 278 p., illus., \$3.75. A collection of articles presenting a pilot's view of the world, and the feel of flight.

FLOWERS OF THE SOUTHWEST MESAS—Pauline M. Patraw and Jeanne R. Janish—*Southwestern Monuments Assoc.*, 112 p., illus., paper, \$1.00. Vacationists in the Southwest will be able to identify readily the plants of that area with this booklet in hand.

GEOLOGIC MAP OF THE UNITED STATES—George W. Stose—*U. S. Geological Survey*, 4 sheets, 25x43 inches, colored, \$2.50. Reprint of the 1932 edition, scale 1:2,500,000 and containing sources of data listed by States. Order direct from U. S. Geological Survey, Washington 25, D. C.

GUIDED MISSILES: ROCKETS & TORPEDOES—Covering the Principles and Techniques of the Missiles of Today and Tomorrow—Frank Ross, Jr.—*Lothrop, Lee & Shepard*, 186 p., illus., \$2.75. A non-technical book about guided missiles, artificial satellites and the future of the rocket in interstellar space.

IMPROVING SCHOOL HOLDING POWER: Some Research Proposals Circular 291—Office of Education—*Govt. Printing Office*, 86 p., paper, 40 cents. The problem of keeping children in school as discussed at the Work Conference on Life Adjustment Education.

JOHNE'S DISEASE (PARATUBERCULOSIS) OF CATTLE: U. S. Dept. of Agriculture Circular No. 873—Aubrey B. Larsen—*Govt. Printing Office*, 8 p., illus., paper, 10 cents. Symptoms, cause, diagnosis, control, and elimination of cattle found with this chronic infectious disease.

LEARNING TO SWIM IN 12 EASY STEPS—Alfred Kiefer, Milton A. Gabrielson and Bramwell W. Gabrielsen—*Prentice-Hall*, 117 p., illus., \$3.00. An Olympic champion and two coaches offer this self-teaching guide to the 50% of the people of the United States who can not swim because they lack a teacher or fear the water. Papa can use it to teach Junior.

MAMMALS FROM BRITISH HONDURAS, MEXICO, JAMAICA AND HAITI—Philip Hershkovitz—*Chicago Natural History Museum*, 22 p., paper, 30 cents. Describing animals found by the Ivan T. Sanderson expedition to the Caribbean area in 1939-1940.

MECHANICAL SOLUTION OF FORMULAS FOR GROWTH RATES—Robert V. Kesling—*University of Michigan Press*, 6 p., paper, 50 cents. Containing scales from which a rapid solution of Huxley's and Schmalhausen's formulas can be read.

A NEW GENUS AND SPECIES OF PRIMITIOPSID OSTRACOD FROM THE DEVONIAN TRAVERSE GROUP OF MICHIGAN—Robert V. Kesling—*University of Michigan Press*, 9 p., illus., paper, 50 cents. Describes the second occurrence of an unusual species in North America.

THE PHYSICAL SCIENCES—Emmett J. Cable, Robert W. Getchell, William H. Kadesch and Harry E. Crull—*Prentice-Hall*, 3rd ed., 496 p., illus., \$7.35. A basic background in the physical sciences for prospective teachers and those people interested in obtaining a general scientific knowledge.

THE PUZZLE OF FOOD AND PEOPLE: A Geography Reader—Amabel Williams-Ellis—*UNESCO*, 56 p., illus., paper, 60 cents. Beautifully illustrated supplementary text containing a jig-saw puzzle which can be cut out, mounted and fitted together, all pieces fitting except one marked war. Order direct from UNESCO, United Nations, New York, sending money with order.

THE RADIO AMATEUR'S LICENSE MANUAL—*American Radio Relay League*, 27th ed., 95 p., illus., paper, 50 cents. Gives the requirements for the various types of licenses and lists the regulations applicable to the "ham operator."

REMARKS ON AND DESCRIPTIONS OF SOUTH AMERICAN NON-MARINE SHELLS—Fritz Haas—*Chicago Natural History Museum*, 42 p., illus., paper, \$1.00. Short faunistic lists, critical remarks on imperfectly known species, and descriptions of novelties.

REPORT OF THE DIRECTOR TO THE BOARD OF TRUSTEES FOR THE YEAR 1950—*Chicago Natural History Museum*, 142 p., illus., paper, \$1.00.

REVIEW OF THE SUBSPECIES OF THE SUNBIRD, NECTARINIA JUGULARIS—Austin L. Rand—*Chicago Natural History Museum*, 10 p., paper, 20 cents. How you can tell where a sunbird comes from by its feathers.

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The female black widow spider is shining jet black on the upper surface of the body but on the underside has a red mark the shape of an hourglass.

PHYSICS

Visible Lightning Bolt Is Earth-to-Cloud Bound

► THE BRILLIANT flash of lightning seen by the human eye is traveling from the earth to a cloud, not from cloud to earth as generally thought.

That is one of the basic facts about lightning which General Electric scientists in Pittsfield, Mass., have used in conducting lightning research during the past 25 years. The flash seen by the eye, spurting from the earth to a cloud, travels at a rate of some 18,000 miles per second, according to Julius H. Hagenguth of the GE laboratory.

He explained that as a lightning charge is building up in the clouds, an opposite charge is building up on earth. The stroke travels slowly from the clouds, invisible to the eye. When it contacts the ground, the brilliant flash which is seen spurts from the ground toward the sky.

There is still much to learn about lightning although many questions have been solved by experimental work in the GE high-voltage laboratory where a 15,000,000-volt jolt of artificial lightning can be obtained with the flick of a switch. Included are some facts which are contrary to long-time beliefs.

Lightning often strikes twice in the same place, Mr. Hagenguth states. The Empire Building in New York City has been struck as many as 48 times in a single season. With the new 222-foot television antenna atop the 1,250-foot structure, more frequent strikes may be expected.

The lightning rod on a building does not ward away the negative bolt with positive charges from the earth. Actually, it intercepts the lightning and conveys it safely away to the ground, thus preventing its flow through vulnerable parts of the structure. The lightning rod is still the homeowner's best protection against the ravages of lightning, he stated.

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