

With the increasing independence of the fishes came also greater freedom of movement. They cast away their armor, and became free swimmers rather than mere sluggish lurkers on the dangerous bottom where the eurypterids crawled. This freedom of movement, with agility and speed the main dependence for both escape from enemies and capture of food, may have been one of the factors that started the evolution of the front end of the central nervous system into a real brain and the development of intelligence.

Prof. Romer cautions that he does not necessarily consider the perilous association of the first fishes with the hungry eurypterids as the only, or even the principal, factor in the subsequent evolution of backboned animals. Nevertheless he does think that this association played an important part in the early stages of vertebrate history.

Science News Letter, November 11, 1933

OCEANOGRAPHY

Swedish Oceanographer Studies Submarine Waves

GREAT wavelike disturbances far beneath the surface of the sea, that never show themselves at the top, are being studied by a noted Swedish oceanographer, Prof. Otto Pettersson. He first noticed them while he was getting data on the salt content of the waters in the Kattegat, outlet strait between the Baltic and North seas. He found that the boundary between the salt water at the bottom and the fresher Baltic water at the surface was subject to great wave-like undulations, as much as two or three yards, although the tide changes at the surface were measurable in mere inches. Since his Kattegat observations, Prof. Pettersson has found even greater submarine or internal waves, especially in partially landlocked waters. In Gullmar fjord, at the western end of the Skagerrak, they reach a height of over thirty yards.

Prof. Pettersson has found a twelve and a half hour cycle in these submarine wave movements, and also other cycles corresponding to various lunar periods. He has advanced the hypothesis that these internal waves depend on the vertical component of the moon's tide-producing force. Not all oceanographers are in agreement with him on this point, and the discussion of the cause of these internal waves is still in lively progress in scientific circles.

Science News Letter, November 11, 1933

• First Glances at New Books

Additional Reviews on Page 320

History of Science

CHARLES DARWIN'S DIARY OF THE VOYAGE OF H.M.S. "BEAGLE"—Edited by Nora Barlow—*Macmillan*, xxx+451 p., 2 folded maps, \$6.50. One of the most famous and epoch-making voyages in the whole history of science, told by the man through whom it was instrumental in revolutionizing modern biology, checked back to his original manuscript by a careful and scholarly editor. Even those fortunates who can boast a first edition of the "Beagle" Diary should have this new book on hand for purposes of comparison; for the rest of the biological world it is practically a necessity.

Science News Letter, November 11, 1933

Herpetology

REPTILES OF THE WORLD—Raymond L. Ditmars—*Macmillan*, xx+321 p., 89 pl., \$5. This new and revised edition of Dr. Ditmars' well-known book has been necessitated primarily through changes in nomenclature; the facts he told us when his book first came out are still so, though there have naturally been some additions to incorporate into the new text. Herpetologists, and zoologists generally, will welcome the new edition.

Science News Letter, November 11, 1933

Education—Psychology

THE SOCIAL BELIEFS AND ATTITUDES OF AMERICAN SCHOOL BOARD MEMBERS—Claude E. Arnett—*Emporia Gazette Press*, 235 p., \$1.75. The findings suggest that "board members are probably far more interested in instilling in the youth of the land the social inheritance of the past than they are in making any serious attempt to prepare them to meet intelligently and tolerantly the complex problems of the future." The study was made possible by the Commission on the Investigation of the Social Studies in the Schools.

Science News Letter, November 11, 1933

Archaeology—Geology

PALEOLITHIC MAN AND THE NILE VALLEY IN NUBIA AND UPPER EGYPT—K. S. Sandford and W. J. Arkell—*Univ. of Chicago Press*, 92 p., 43 pl., \$6. This is Volume II of the Oriental Institute's report on its prehistoric survey of Egypt and Western Asia. Stone implements left by Old Stone Age men along the Nile and later embedded

in the banks have been carefully studied in relation to their geologic background by the expedition. The region discussed in this volume is the 350 miles from Semnah to Luxor. Some rock drawings, perhaps the oldest found in the Nile Valley, are described.

Science News Letter, November 11, 1933

Botany—Zoology

PLANTS AND ANIMALS—Edited by Deette Rolf—*Holt*, 560 p., \$6. From Aardvark to Zinnia, this book, which is Vol. IV of Champlin's Young Folks Cyclopaedia, describes thousands of animals and plants, with hundreds of good halftone illustrations. An excellent volume for the school library, or for the home bookshelf if there are growing children about.

Science News Letter, November 11, 1933

Nutrition

WHAT SHALL I EAT?—Edith M. Barber—*Macmillan*, 106 p., \$1.75. A practical and amusing discussion of a universal problem.

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Psychology

PSYCHO-ANALYSIS AND ITS DERIVATIVES—H. Crichton-Miller—*Holt*, 256 p., \$1.25. The work and theories of Freud, Jung, Adler, and Prinzhorn discussed and compared by the director of an organization where psychotherapists of all the schools are putting their theories to the daily test of practice. Although a pocket-size volume, it is printed in unusually large and readable type.

Science News Letter, November 11, 1933

Horticulture

ORNAMENTAL TREES—Harold Mowry—*Agric. Exp. Sta., Gainesville, Fla.*, 136 p., free. Descriptions, well illustrated, of the principal ornamentals of value in Florida and elsewhere in the Gulf Coast region, both native and introduced. Of value both to home owners and nurserymen.

Science News Letter, November 11, 1933

Agricultural Economics

FARMERS' COOPERATIVE ASSOCIATIONS IN FLORIDA. II. ORGANIZATION AND MANAGEMENT—M. A. Brooker and H. G. Hamilton—*Agr. Exp. Sta., Gainesville, Fla.*, 100 p., free.

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• First Glances at New Books

Additional Reviews
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Psychology

ADOLESCENT PSYCHOLOGY—Ada Hart Arlitt—*American Book*, 250 p., \$2.25. Social conditions in our modern society have extended the dependent period of childhood to cover the years of high school, college, and professional training during which time the individual has attained to physical, physiological and mental adulthood. Marriage is delayed far beyond the time when the person is sexually mature; responsibility is withheld far beyond the time when he should be mentally and emotionally mature. The resulting conflicts and problems are legion and are discussed sympathetically in this volume intended as a college and teachers' college text.

Science News Letter, November 11, 1933

Industrial Hygiene

INDUSTRIAL HEALTH SERVICE—Levrett Dale Bristol—*Lea and Febiger*, 170 p., \$2. Simply written, concise and intensely practical is this manual on industrial hygiene. Much of it will be useful to employers and supervisors, but the worker himself can learn from it important lessons in keeping well and fit for his job.

Science News Letter, November 11, 1933

Entomology

MORPHOLOGY OF THE INSECT ABDOMEN, PART II. THE GENITAL DUCTS AND THE OVIPOSITOR—R. E. Snodgrass—*Smithsonian Inst.*, 148 p., 45c. A scholarly piece of work, of great value to advanced students and research workers in entomology.

Science News Letter, November 11, 1933

Biography

ST. ALBERT THE GREAT—Thomas M. Schwertner—*Bruce*, xxxi+375 p., \$3. If ever science adopts an official patron saint, Albert of Cologne, who began to be called "the Great" even during his own lifetime and was known also as "the Universal Doctor," should be a strong candidate for the honor. Thorough student of Aristotle, yet accepting nothing of the Stagyrte's until he had tested it himself, keen observer of natural-history phenomena and no less keen experimenter in the laboratory science of his time, he looms through the mists of the centuries as one who with infinite pains and infinite energy broke a path which we later comers have broadened and levelled into a great highway. All these aspects of Albert's

life and works are thoroughly appreciated by Dr. Schwertner, and given their proper place beside his other great qualities as teacher, philosopher, churchman and saint.

Science News Letter, November 11, 1933

Botany

WILD FLOWERS IN KANSAS—Frank C. Gates—*Kansas State Printing Plant*, 295 p., free. Kansas begins as prairie and ends as plain; her flowers, headed by *Helianthus*, are predominantly darlings of the sun—though her groves and streamside timber-strips shelter more than a few lovely spring mesophytes. Like all states crossed by the hundredth meridian, Kansas has hitherto suffered from a failure of "eastern" and "western" floral manuals to overlap, but now a home botanist has remedied the lack most satisfactorily. The 447 good, clear-cut line drawings of species, by Mrs. Albert Dickens, are going to be a great help to botanists making their first acquaintance with prairie and plains plants.

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Sociology

THE COMMUNITY AND SOCIETY—Loran David Osborn and Martin Henry Neumeier—*American Book*, 468 p., \$3.50. An introductory textbook in sociology for college students.

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Entomology

A CLASSIFICATION OF NORTH AMERICAN AGALLIAN LEAF HOPPERS—P. W. Oman—*Govt. Print. Off.*, 91 p., 4 pl., 10c. A Technical Bulletin of the U. S. Department of Agriculture of interest to entomologists, especially to economic entomologists. In addition to the plates, there are 18 solid pages of line illustrations of critical diagnostic characters.

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Standards

1933 NATIONAL ELECTRICAL CODE—*International Association of Electrical Inspectors*, 304 p.

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Archaeology-Anthropology

THE ALISHAR HUYUK, SEASONS OF 1928 AND 1929, PART II—Erich F. Schmidt—*Univ. of Chicago Press*, 148 p., 198 illus. 11 pl., \$7. With this volume, the Oriental Institute brings the history of a site in Asia Minor down to modern times. The account opens with Stratum Five, which was settlement after the fall of the Hittite Empire, and the following two strata complete the archaeological history. The report is very complete, containing detailed information on ground plans, excavated objects, and burials. In an added chapter, Wilton M. Krogman discusses cranial types found at Alishar and analyzes their possible racial affinities.

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Biography

AUTOBIOGRAPHY OF A BIRD LOVER—Frank M. Chapman—*Appleton*, 420 p., \$3.75. It is a great privilege to have as a friend a man who can take you to interesting places; but there is always an offset in the irremediable fact that he cannot take you to the places where he has already been, at least to show them to you as he first saw them himself. But when such a man sits down and writes the story of his interesting life, he at least partly removes this disability; hence the high value of well-done autobiographies. Dr. Chapman, who is a true scientist and at the same time a popularizer in the best sense, has at last done us this great service. All who know him, whether personally or through his writings, will be grateful.

Science News Letter, November 11, 1933

Bacteriology

PATHOGENIC MICROORGANISMS—William H. Park and Anna W. Williams—*Lea and Febiger*, 867 p., \$7. The tenth edition of this classic work has been revised and considerably enlarged to include new knowledge of immunity and experience to date with active immunization against diphtheria and scarlet fever.

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