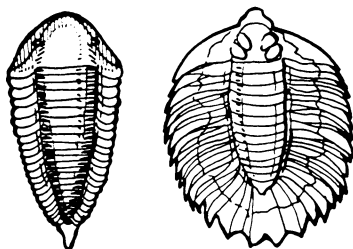




Trilobites



➤ ALTHOUGH the age of the earth is counted in billions of years, let us imagine it to be 100 years old. On this scale man has existed on the earth less than one year. Mammals of any kind—the group of warm-blooded animals of which man is a relatively recent development—have existed only during the last ten years.

The first 73 years of the earth's history was a steamy epoch during which, at some point, a variety of one-celled creatures like sponges, algae, and radiolaria developed, and had the whole globe to themselves. Around the end of this span more complicated forms of life began to evolve. One of the most successful of these was the trilobites.

On our 100-year time scale, the trilobites were the dominant form of life for almost eight years. To revert to conventional time language, the reign of the trilobites took place about 500,000,000 years ago and lasted for roughly 200,000,000 years.

Trilobites continued to exist long after their heyday was over, and it was not until just before the earliest mammals emerged, about 200,000,000 years ago, that they disappeared completely. It is from fossil remains in rocks and sediment deposits that paleontologists are able to reconstruct the

ancient history of the rise and fall of the trilobites.

Although of a hoary age, the trilobite remains are sufficiently numerous and well preserved to enable scientists to reconstruct the family tree with great accuracy. Trilobites form a separate class of the great arthropod phylum which includes the insects, the spiders, and the crustaceans (lobsters, crabs, shrimp, etc.).

They get their name from the two long furrows which run down the back, forming three lobes. The earliest of the three-lobed creatures, or trilobites, were very tiny, although in the course of their evolution they reached an average size of one to four inches in length. There were more than 1,000 different species of trilobite and the size range varied considerably, but the largest was only about 18 inches long.

During the period when trilobites were the lords of the earth, they made up at least 60% of the total animal population. They were marine animals which preyed on smaller creatures. Although they are now extinct, it is thought that today's shrimp, crabs, and lobsters are the direct evolutionary descendants of the ancient trilobites.

From an evolutionary point of view trilobites got in on the ground floor. They dominated every other form of life for 200,000,000 years. There was every reason to think that they had a permanent lease. But things turned out otherwise.

Today man eats broiled lobster, and studies fossils. He rarely stops to wonder: Who will be top dog 200,000,000 years from now?

Science News Letter, April 8, 1950

Books of the Week

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THE AMERICAN JOURNAL OF HUMAN GENETICS—Vol. I, No. 1—C. W. Cotterman, Ed.—*The American Society of Human Genetics*, quarterly, 112 p., paper, Volume: \$8.00, Single issue: \$2.50 (Each volume will consist of four numbers). The introduction is written by H. J. Muller, President of the American Society of Human Genetics, who states that it is the hope of the society that this quarterly will serve as the center in North America for bringing together such genetical studies.

A.S.T.M. STANDARDS ON ADHESIVES—*American Society for Testing Materials*, approx. 58 p., illus., paper, \$1.25.

CANNING TECHNOLOGY—A. J. Howard—*Sherwood Press*, 287 p., illus., \$8.00. An account of various processes connected with food canning. Of British origin.

A CENTURY OF ASTRONOMY—Angus Armitage—*Macdonald*, 256 p., illus., \$2.20. A guide for the layman to the prodigious expansion of astronomical knowledge which has taken place in the last 100 years.

CHILD OF DESTINY: The Life Story of the First Woman Doctor—Ishbel Ross—*Harper*, 309 p., \$3.50. The life of Elizabeth Blackwell as told by the author.

COURSES ON LATIN AMERICA: In Institutions of Higher Education in the United States 1948-1949—Estelita Hart, Compiler—*Pan American Union*, 291 p., \$1.50.

CREATIVE PERSONALITY: The Next Step in Evolution—Charles Francis Potter—*Funk & Wagnalls*, 215 p., \$2.50. The author urges us to go forward and find our inspiration in evolutionary life itself rather than retreat from the momentous problems of today.

DIRECTORY OF INVENTOR AIDS: Supplemental to Professional Services of the Patent Bar 1950 Edition—*Directory of Inventor Aids*, 64 p., paper, \$2.00. A compilation of information regarding the various non-legal services available to inventors.

THE FLORIDA INDIAN AND HIS NEIGHBORS: Papers Delivered at an Anthropological Conference Held at Rollins College, April 9 and 10, 1949—John W. Griffin, Ed.—*Rollins College*, 168 p., illus., paper, \$1.00.

FOUR NEW SUBSPECIES OF THE GENUS CICINDELA (COLEOPTERA, CICINDELIDAE)—Patricia Vaurie—*American Museum of Natural History*, 6 p., paper, 25 cents.

GENERALIZED TYPES OF FARMING IN THE UNITED STATES: Including a list of counties in type-of-farming regions and subregions—Bureau

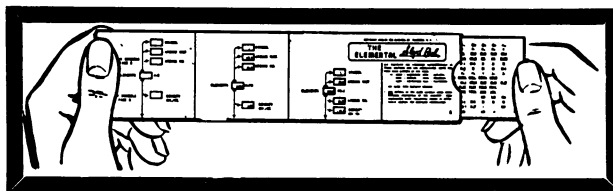
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of Agricultural Economics—*Gov't. Printing Office*, U. S. Dept. of Ag. Information Bull. No. 3, 35 p., illus., paper, 25 cents. This discussion relates primarily to the geographical aspects of farming.

GRAIN BIN REQUIREMENTS—Benton M. Stahl—*Gov't. Printing Office*, U. S. Dept. of Ag. Circ. No. 835, 23 p., illus., paper, ten cents.

GREAT EXPRESSIONS OF HUMAN RIGHTS—R. M. MacIver, Ed.—*Institute for Religious and Social Studies* (Distributor: *Harper*), 321 p., \$2.50. A series of discussions by such prominent men as Sherman Kent, Elmer Rice, Norman Thomas on 14 statements such as the Magna Carta, the Bill of Rights, and the International Bill of Rights.

HISTOLOGY—Arthur Worth Ham—*Lippincott*, 756 p., illus., \$10.00. An introductory text which takes into account not only the study of histology itself but also some of the problems which students have in mastering the principles of the subject. Helpful illustrations.

MECHANICAL COMPUTING MECHANISMS—Robert R. Reid and Du Ray E. Stromback—*Product Engineering*, approx. 20 p., illus., paper, free upon request to The Franklin Institute Laboratories, Admin. Div., 20th St. and Ben Franklin Parkway, Phila. 3, Pa. A series of four articles on a systematic approach to the designing of mechanical analog computers.

MEN AGAINST THE STARS: Adventures in Science Fiction Series—Martin Greenberg, Ed.—*Gnome Press*, 351 p., \$2.95. A compilation of stories each developing a different phase of space travel. Isaac Asimov, Lewis Padgett, Hal Clement are among the many authors contributing these different phases. Willy Ley has written the introduction. Fiction, of course.

MINERALS YEARBOOK 1947—Allan F. Matthews, Ed.—*Gov't. Printing Office*, U. S. Dept. of Interior Publ., 1616 p., illus., \$4.25. Basic data on the performance of the mineral industry during 1947.

MODERN CHEMISTRY—Charles E. Dull, William O. Brooks and H. Clark Metcalfe—*Holt*, Rev. ed., 564 p., illus., \$3.16. An introductory high school text.

NEW DISCOVERIES IN MEDICINE: Their Effect on the Public Health—Paul R. Hawley—*Columbia University Press*, 134 p., illus., \$2.50. A series of talks which the author delivered at the Bampton Lectures in America at Columbia University. Written in nontechnical language.

NEW GRASSES FROM MEXICO, CENTRAL AMERICA, AND SURINAM—Jason R. Swallen—*Gov't. Printing Office*, Bull. U. S. National Museum, approx. 30 p., paper, 15 cents. The author describes 48 new species and proposes two new names.

THE 1950 ANNUAL SUPPLEMENT: The World Book Encyclopedia—J. Morris Jones, Man. Ed.—*Field Enterprises, Inc.*, 224 p., illus., paper, \$1.25. Reviews important events and developments of 1949. The section on inventions and discoveries is by Martha Morrow and A. C. Monahan, Science Service Staff Writers.

NOTES ON SOME INDO-AUSTRALIAN MONITORS (SAURIA, VARANIDAE)—Robert Mertens—*American Museum of Natural History*, 7 p., illus., paper, 25 cents.

OUT OF MY LATER YEARS—Albert Einstein—

Philosophical Library, 282 p., \$4.75. A new collection of essays by this distinguished physicist.

PATTERN FOR CONQUEST: An Interplanetary Adventure—George O. Smith—*Gnome Press*, 252 p., \$2.50. The author has plotted his story around alien people on strange worlds, when space travel has become a common thing. Fiction.

A POLICY AND PROGRAM FOR SUCCESS: Bold New Program Series No. I—Dewey Anderson and Stephen Raushenbush—*Public Affairs Institute*, 76 p., illus., paper 40 cents. The first of a series of eight studies on programs, policies and methods for aiding the underdeveloped two-thirds of the world to a larger partnership for peace, freedom, and justice.

PRESERVATION OF AGRICULTURAL SPECIMENS IN PLASTICS—G. R. Fessenden—*Gov't. Printing Office*, U. S. Dept. of Ag. Misc. Publ. No. 679, 78 p., illus., paper, 25 cents. A description of two preservation methods.

REPORT ON INSPECTION AND ANALYSIS OF COMMERCIAL FERTILIZERS, 1949—H. J. Fisher, Chemist in Charge—*Connecticut Agricultural Experiment Station*, 51 p., illus., paper, free upon request to publisher, New Haven, Conn.

SCIENCE IS A SACRED COW—Anthony Standen—*Dutton*. 221 p., \$2.75. Scientists will be the first to chuckle over this penetrating and biting discussion of facts and foibles.

SIXTH COLUMN: A Science Fiction Novel of a Strange Intrigue—Robert A. Heinlein—*Gnome Press*, 256 p., \$2.50. The story of how six men save America which has been conquered by the Asiatics. Fiction.

STEAM BLAST VOLCANIC ERUPTIONS—Fourth Special Report of the Hawaiian Volcano Observatory of the U. S. Geological Survey and the Hawaiian Volcano Research Association—T. A. Jaggar—*Hawaiian Volcano Research Association*, 137 p., illus., paper, \$1.00. A study of Mount Pelee in Martinique as a type of volcano.

STRUCTURE IN RELATION TO CELLULAR FUNCTION—Robert Chambers—*New York Academy of Sciences*, Approx. 194 p., illus., paper, \$3.00. The series of papers was presented before the Conference on Structure in Relation to Cellular Function held by the Section on Biology of the New York Academy of Sciences, May 2 and 3, 1947.

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