

and laws, and the final section uses the earlier presentations to find the rate law for an elementary reaction. The two final chapters are studies of catalysis and photochemistry to the extent that they are helpful in understanding kinetics in general. In the body of the text, kinetic studies deal with reactions caused by collisions. Here an introduction is given to those rate processes caused by absorption of radiation and the converse process where radiation is produced in an elementary reaction.

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Earth Sciences

EARTH SCIENCE CURRICULUM PROJECT REFERENCE SERIES, W. H. Matthews III (Editor), RS-1, RS-2, RS-3 — set of three for \$1.00, Prentice-Hall Inc., Englewood Cliffs, New Jersey, 1964.

The first three pamphlets in this reference series provide important information on source materials for the biology teacher. Pamphlet RS-1 48 pp., will be extremely useful in locating data on fossils and earth history for local and regional areas. Degree-granting departments, government agencies, and scientific organizations are given for each state in the fields of astronomy, geology, meteorology, oceanography, and physical geography. Astronomical observatories and planetariums are also listed. A separate twelve page section presents coded designations for type of exhibit in United States and Canadian museums. This pamphlet will encourage contact with state surveys and educational institutions for source materials and consultations.

Pamphlet RS-2, 34 pp., have listed 1260 references for earth science, astronomy, geology, meteorology, oceanography, and physical geography. The six major subject areas are further subdivided into sections on introductory textbooks, teaching guides and handbooks, laboratory manuals and workbooks, general, reference works, periodicals, and career booklets. In addition, a section on field trips and field methods is included for geology, and a section on atlases accompanies the physical geography coverage.

Topics for oceanography illustrate a typical grouping of the general section within each subject area. The 210 oceanographic references are found under the headings of introductory reading, geology of sea bottom and coasts, islands and reefs, ocean charts and maps, ocean life, ocean movements, ocean water, oceanographic expeditions, oceanographic techniques and procedures, resources of the sea, and under-sea exploration. Forty-six references comprise

the sub-section on ocean life. The fossil sub-section in the geological subject area contains sixty-six items. Addresses for publishers are given on the last six pages.

The first section of RS-2, 34 pp., lists 239 films by title. Descriptions include a critical summary, coded audience suitability, date, length, sound or silent, black-and-white or color, and primary distributor. A sampling of film titles includes the following: *Animals of the Ice Ages*, *Beaver Dam*, *Cave Community*, *Cosmic Rays*, *The Dinosaur Age*, *The Fossil Story*, *In the Beginning*, *Life Between Tides*, *Marine Biologist*, *National Parks — Nature's Last Frontier*, *Prehistoric Animals of the Tar Pits*, *Story in the Rocks*, *What's Under the Ocean*, *When Air Masses Meet*. A second section lists the same films by subject. Areas of special interest to the biology teacher are arctic regions, biology, conservation of natural resources, fossils, historical geology, national parks, oceans and oceanography, water supply, and weather and climate. The third section lists films by primary distributor, and a fourth section lists the addresses at which the films may be obtained.

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GEOLOGY AND EARTH SCIENCES SOURCEBOOK FOR ELEMENTARY AND SECONDARY SCHOOLS, Robert L. Heller, Ed., 496 pp., \$2.96, American Geological Institute, Holt, Rinehart and Winston, Inc., New York, 1962.

This is one of the most complete sourcebooks this reviewer has seen for any subject. It is the result of the consideration given by the Education Committee of the American Geological Institute to the type of program that would be most effective in improving the quality of current teaching. The need for this compilation of resource material is the result of the rapid growth of earth science offerings in schools throughout the country, inadequate teacher training for such courses, and the need for encouraging its incorporation in all science courses.

This sourcebook of materials for elementary and secondary schools is the product of a writing conference organized by an AGI steering committee. The committee consisted of university, secondary school, and industry representatives. The criteria for including material was its overall quality of subject matter, suitability for use in general science for grades 1-9, suitability for an earth science course at the high school level, and suitability as supplemental material for related courses at the high school level.

Twenty-three units, covering the entire field of earth science are presented, including the