This Is the American Earth. Ansel Adams and Nancy Newhall. Sierra Club, San Francisco, Calif., 1960. xviii + 89 pp. Illus. $15.

Any child can snap the shutter and hold a mirror up to nature, but great photography is more than luck, or even craftsmanship. Those extra ingredients of art, the artist's deep emotion and his controlled ability to communicate it, are present in many of the pictures that make up this beautiful book. Ansel Adams, whose own work makes up more than half of this collection, is a master who wields the camera's mindless eye exactly as a painter does his brush. The result is pure esthetic delight, a "stirring book," as David Brower calls it in his introduction, a fitting celebration of the glories of our national parks, and a splendid tribute to the farsighted citizens who fought to preserve them.

If this were a commercial publisher's bid for a share of the Christmas trade, one need say no more about it. The book would be a handsome gift for anyone. Far from being intended as an eye-catching gift package, however, it has a Message, promulgated by the Sierra Club, a leading conservationist organization. The message is grafted onto the photographs in the form of a text by Nancy Newhall. At the risk of seeming to throw spitballs at Home and Mother, I have to say that what comes through to me is not Conservation, but Conservationism. By this I mean a tendency to effusive overstatement that makes some conservationists sound like members of a cult.

Ordinarily the tendency is harmless enough, perhaps; but ridicule is a dangerous political weapon in the hands of one's opponents. Conservation, as a political movement, stands for intelligent, ecologically sound use of man's environment, with due regard for ethical and esthetic as well as economic standards. The preservation of wilderness is one of the essential steps in the wise use of resources, for many reasons, but scenery is not the only resource. If the proponents of preservation can be made to look ridiculous or, worse, can be charged with cant, the whole political program suffers. And it sometimes appears that we are asked to set aside more wilderness, not because it is essential, but so that more voices crying there can go unheard, except by the elect.

Nancy Newhall is a writer, not a conservationist, and cannot be held responsible for all the excesses of conservationism. For a professional writer, however, she is remarkably insensitive to language; from her wide (and probably hasty) reading she has picked up virtually all the more pretentious cliches of the cultist fringe. The consequence, if not exactly cant (it is too obviously well-intentioned for that), is a pseudopoem, so full of Message that there is no room for poetry. Even more surprising is its disharmony with the photographs: its mood is relentlessly epic where lyrics would seem to have been called for.

Fortunately, any purchaser who can get past the book's repellent title will probably not even notice the text, and the pictures *are* magnificent.

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Foundations of Modern Analysis. J. Dieudonné. Academic Press, New York, 1960. xiv + 361 pp. Illus. $10.

Dieudonné is a member of the famous group of mathematicians called N. Bourbaki, a group which is very formal, pure, and abstract. This book displays these traits in a humanly palatable form; however, the reader is assumed to be familiar with "advanced calculus" and an abstract variety of "elementary algebra." The purpose of the book, in the author's words, is "(a) to provide the necessary elementary background for all branches of modern mathematics involving 'analysis'; (b) to train the student in the use of the most fundamental mathematical tool of our time—the axiomatic method (with which he will have had very little contact, if any at all, during his undergraduate years)."

The author states: "It will be very apparent to the reader that we have everywhere emphasized the conceptual aspect of every notion, rather than its computational aspect, which was the main concern of classical analysis; this is true not only of the text, but also of most of the problems." He then speaks of "the necessity of a strict adherence to axiomatic methods, with no appeal whatsoever to 'geometric intuition,' at least in the formal proofs: a necessity which we have emphasized by deliberately abstaining from introducing any diagram in the book. My opinion is that the graduate student of today must, as soon as possible, get a thorough training in this abstract and axiomatic way of thinking, if he is ever to understand what is currently going on in mathematical research. This volume aims to help the student to build up this 'intuition of the abstract' which is so essential in the mind of a modern mathematician." This statement must sound very mystical to the uninitiated; its source is the fact (proved in this century) that all of the ideas of mathematics can be developed formally without any reference to the "real world." This fact sets the stage for the mathematician to act as a disembodied spirit; time and space no longer play any part in his deliberations; any intuitions he has must be of the abstract. That such intuition is possible (?) is an amazing ability of *homo sapiens;* of course, man's ability to create mathematical ideas is derived from the use of several (if not all) human faculties.

In the following interesting passage from the book, it is worth noting that words which refer to time and space are enclosed in quotation marks: "The student should as soon as possible become familiar with the idea that a function f is a single object, which may itself 'vary' and is in general to be thought of as a 'point' in a large 'functional space'; indeed, it may be said that one of the differences between the classical and the modern concepts of Analysis is that, in classical mathematics, when one writes $f(x)$, f is visualized as 'fixed' and x as 'variable,' whereas nowadays both f and x are considered as 'variables' (and sometimes it is x which is fixed, and f which becomes the 'varying' object)."

I recommend this book to those who want to be professional mathematicians and who already have had some experience with abstract methods; others enter at their own risk.

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Algenkunde. Bohuslav Fott. Fischer, Jena, 1959. vii + 482 pp. Illus. DM. 48.90.

Algae, in the broadest definition of the term, are the subject of this treatise, which is based on the author's *Sinice a Řasy,* written in Czech and published in 1956. The bulk of the book is de-

voted to a taxonomic survey, including Cyanophyta, Chrysophyta, Phaeophyta, Rhodophyta, Chlorophyta, Euglenophyta, Pyrrophyta, Cryptophyceae, Chloromonadophyceae, and colorless flagellates of uncertain position. There are brief accounts of the cytology, morphology, reproduction, and life histories of each group, followed by a systematic analysis to the level of representative genera. The last quarter of the book comprises an extensive and well-written review of algal ecology and a shorter chapter dealing with such interesting economic aspects as the significance of algae in fisheries and water-quality studies.

Those who are acquainted with Fott's careful research on microscopic freshwater algae have good reason to expect *Algenkunde* to be outstanding, but they may be disappointed. Any book that is intended to cover so vast a field in so few pages is bound to be seriously limited in its usefulness and reliability. The disproportionate allocation of space among the various divisions of algae reflects Fott's personal interests and experience, and the notable strength of the sections on Chrysophyta and Chlorophyta is balanced, unfortunately, by the weakness of the sections on other groups. The marine algae, for the most part, have not been updated beyond Oltmanns (1922–23). There is not sufficient information about individual types of algae to enable *Algenkunde* to serve as a textbook. On the other hand, the treatment is so superficial and the documentation so fragmentary that for English-speaking workers, at least, it offers no competition to Fritsch (1935, 1945) as a general reference. Curiously, the bibliographies are grossly incomplete: a check of literature citations in the text on Chlorophyta, for example, revealed that approximately half were not listed in the bibliography.

Despite these shortcomings, *Algenkunde* should prove useful to specialists and advanced students.

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Miscellaneous Publications

(Inquiries concerning these publications should be addressed not to Science, *but to the publisher or agency sponsoring the publication.)*

Admission Requirements of American Medical Colleges (Including Canada). 1960–61. Helen Hofer Gee and E. Shepley Nourse, Eds. Assoc. of American Medical Colleges, Evanston, Ill., 1960. 241 pp. $2.

Bulletin of the British Museum (Natural History). *Entomology*, vol. 9, No. 4, "The African species of the genus *Cheumatopsyche* (Trichoptera, Hydropsychidae and the Ephemeroptera types of species described by A. E. Eaton, R. McLachlan, and F. Walker," D. E. Kimmins, 66 pp., 25s; vol. 9, No. 5, "The *Jamides Euchylas* complex (Lepidoptera: Lycaenidae)," G. E. Tite, 17 pp., 8s; *Zoology*, vol. 6, No. 7, "The ecology and taxonomy of some Angola birds (based on a collection made in 1957)," B. P. Hall, 86 pp., 40s. British Museum (Natural History), London, 1960.

The Comparative Pharmacology of Some Psychotropic Drugs. Erik Jacobsen. World Health Organization, Geneva, Switzerland, 1960. 82 pp. Reprinted from *Bulletin of the World Health Organization* **21**, 411.

Comparison of 1960 Cooperative and Regular Graduate NSF Candidates and Awardees. Herbert Soldz. Tech. Rept. No. 17. Office of Scientific and Technical Personnel, National Academy of Sciences–National Research Council, Washington, D.C., 1960. 32 pp.

Excavaciones Arqueologicas en San Pablo. Informe preliminar. Carlos Zevallos Menendez and Olaf Holm. Olaf Holm, Casilla 49-96, Guayaquil, Ecuador, 1960. 42 pp.

Field Museum of Natural History, Botanical Series. vol. 1, No. 2, part 1, No. 2, "Flora of Peru." J. Francis Macbride, Chicago Natural History Museum, Chicago, Ill., 1960. $1.75. 98 pp.

Guide to U.K.A.E.A. Documents. J. Roland Smith, Ed. United Kingdom Atomic Energy Authority, London, ed. 2, 1960 (order from British Information Services, 45 Rockefeller Plaza, New York). 32 pp. $0.32.

Human Factors at Extreme Altitudes: Synopsis and Bibliography. Frank W. Banghart and Evan G. Pattishall. Air Research and Development Headquarters and Division of Educational Research, University of Virginia, Charlottesville, 1960. 111 pp.

Impact of College. New dimensions in higher education, No. 4. Mervin B. Freedman. U.S. Office of Education, Washington, D.C., 1960 (order from Supt. of Documents, GPO, Washington 25). 27 pp. $0.15.

Industry Aids to Education. First annual report. New England School Development Council, 20 Oxford St., Cambridge, Mass., 1960. 46 pp.

International Atomic Energy Agency. **Disposal of Radioactive Wastes.** vol. 2. Conference proceedings, Monaco, 16–21 November 1959. 575 pp. $6. **Use of Radioisotopes and Supervoltage Radiation—in Radioteletherapy.** Present status and recommendations. Report and background information for a study group convened by the IAEA and WHO. 88 pp. $1.50. International Publications, New York 22, 1960.

Modern Foreign Languages in the Elementary School. Teaching techniques. Elizabeth Keesee. U.S. Office of Education, Washington, D.C., 1960 (order from Supt. of Documents, GPO, Washington 25). 65 pp. $0.45.

National Research Council of Canada. **Report on University Support for Science, Engineering, and Medicine for the 43rd Year of Operation 1959–60.** National Research Council of Canada, Ottawa, 1960. 224 pp. $0.50. Support for research at Canadian universities reached a total of $9.37 million in 1959–60, an increase of $2.62 million over 1958–59 and $6.25 million over 1955–56.

Notas de Fisica. vol. 6. No. 2, "Inversion operations in quantum field theory," J. L. Lopes, 121 pp.; No. 3, "On the finite dimensionality of every irreducible unitary representation of a compact group," Leopoldo Nachbin, 6 pp.; No. 4, "Angular distribution of the reaction ^{9}Be(^{6}Li, ^{7}Li) ^{8}Be," L. Marquez and C. Redon, 10 pp. Centro Brasileiro de Pesquisas Físicas, Rio de Janeiro, Brazil, 1960.

Nuclear Science Series. NAS–NS 3014, "The radiochemistry of indium." D. N. Sunderman and C. W. Townley. National Academy of Science–National Research Council, Washington 25, 1960 (order from Office of Technical Services, Dept. of Commerce, Washington 25). 46 pp. $0.50.

Paleozoic Solenoporaceae and Related Red Algae. Quarterly of the Colorado School of Mines, vol. 55, No. 3. J. Harlan Johnson. Colorado School of Mines, Golden, 1960. 77 pp. $1.25.

Proceedings of the California Academy of Sciences, vol. 31, No. 7, "First records of the Echeneidid fish *Remilegia australis* (Bennett) from California, with meristic data." W. I. Follett and Lillian J. Dempster. The Academy, San Francisco, Calif., 1960. 15 pp.

The Refractive Index of Air for Radio Waves and Microwaves. National Physical Laboratory, Department of Scientific Research, Teddington, Middlesex, England. 27 pp. Tables are based on formulas derived by L. Essen and K. D. Froome at the laboratory.

Research in School and College Personnel Services. Summaries of unpublished studies, September 1956–September 1958. Paul Macminn and Carroll H. Miller, and Frank E. Wellman. U.S. Office of Education, Washington, D.C., 1960 (order from Supt. of Documents, GPO, Washington 25). 136 pp. $0.55.

The Subject Matter Preparation of Elementary and Secondary School Teachers. Proceedings of the 30th annual conference of teacher education, University of Minnesota, 9–12 December 1959. College of Education, Univ. of Minnesota; Commission on Teacher Education and Professional Standards, National Education Assoc.; and the Minnesota Education Assoc. College of Education, Univ. of Minnesota, Minneapolis, 1960. 174 pp.

Testing and Taming of Nuclear Weapons. No. 303. David R. Inglis. Public Affairs Pamphlets, New York 16, 1960. 28 pp. $0.25.

University of California Publications in Zoology, vol. 67, No. 2, "An analysis of intraspecific variation in the kangaroo rat *Dipodomys Merriami.*" William Z. Lidicker, Jr. Univ. of California Press, Berkeley, 1960. 88 pp. $2.