

Morley, Thompson, and Rowe on the reference shelves of my professional colleagues. Von Hagen is our best-known popularizer in this field; he writes well and lucidly, and knows his stuff well. Compared with the volume's great amount of information and data, errors are few, and most of those pointed out in reviews on the paperbacks, published in professional journals, have been corrected. However, contrary to modern opinion for the last decade or more, Von Hagen still considers Teotihuacan as Toltec and denies any trans-Pacific influence.

Errors in the spelling of names and native words, such as Chichanel for Chicanel, are still too frequent, though most of those in the earlier editions have been corrected. In the map on page 34, Tabasco is an error for Tarasco.

The many drawings by Alberto Beltran, in the style and spirit of native artists of the period, illustrate the native life so well that, in the words of one professional reviewer, "The [Aztec] book can be strongly recommended on the basis of them alone."

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## Perceptive Analysis

**Fertility and Survival.** Population problems from Malthus to Mao-Tse-Tung. Alfred Sauvy. Translated by Christine Brook-Rose. Criterion Books, New York, 1961. 232 pp. Illus. \$7.50.

In this easily read and informative book the population problem is put in perspective by Alfred Sauvy, the French demographer and scholar who has contributed so remarkably to the development and organization of modern demographic research in France. His findings reflect his years of experience on the Population Commission of the United Nations and many of the able inquiries carried out by the National Institute of Demographic Studies (of France) under his directorship.

The book is divided into three main parts. In the first, devoted to data and "vain solutions," the population problem is represented as existing primarily in the underdeveloped world. The problem has been greatly accentuated in this world by the marked decline in mortality which began some 20 to 30 years

ago. For fertility has declined little if at all, with the result that natural increase has risen to 2 to 3 percent per year, even in densely populated countries, and emigration can provide little if any relief. Accordingly, if man's lot is to improve appreciably, output must be increased much more rapidly or fertility must be reduced.

In the second part, Sauvy shows the "economic solution" to be inadequate. It is seldom possible for underdeveloped countries to maintain high current rates of natural increase and at the same time supply enough capital and other prerequisites for economic growth to permit per capita income to rise notably and continuously. Nor is foreign aid likely to be in sufficient volume. "The economic solution is not enough." There is need also, he indicates in part 3, for the demographic solution, control of births and reduction of the rate of natural increase to manageable dimensions; but this solution must be accompanied by economic development.

Sauvy devotes some attention to the demographic situations of communist countries, to the bearing of communist ideology upon demographic practice, and to the probable impact of the perfection of sterilizing pills. Near the bottom of page 22 the number cannot be "3,000 millions"; the underdeveloped-country densities reported on page 110 incorrectly refer to 1800.

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## Theory and Application

**Separation of Heavy Metals.** Anil K. De. Pergamon, New York, 1961. 308 pp. \$9.

This is a compilation of methods for separating certain metals by immiscible solvent extraction and ion exchange. The metals considered are, to a large extent, those which are important in the nuclear energy field, and the book will interest radiochemists and chemical analysts. Approximately 50 metals are treated, namely those included in the series Rb to Te ( $Z = 37$  to 52), Cs to Bi (55 to 83), and Fr to No (87 to 102).

The book is divided into four parts. Parts 1 and 2 deal with extraction and ion-exchange separations, respectively; common procedures are given in brief

form, with some consideration of the elementary theoretical aspects of these methods. Analytical procedures for determination of the separated heavy metals are compiled in part 3. The treatment is very compressed; for example, under uranium we find directions for two gravimetric, one volumetric, one polarographic, one fluorimetric, and three colorimetric methods presented in approximately three pages. In part 4 a number of well-known separation schemes for processing spent reactor fuels and for producing radioisotopes are outlined. The appendix contains tables of fission products, properties of organic solvents and of some chelating agents, and characteristics of ion-exchange resins. All this material is covered in a little less than 300 pages of rather large type.

It is useful to have a one-volume list of both liquid-liquid and ion-exchange methods for separating the metals mentioned, but users of this book should know that separation procedures published in the last 3 or 4 years are, for the most part, not included. Only a dozen or so literature references are dated later than 1957, and most of these are for 1958.

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## Aa to Zoophyte

**A Glossary of Geographical Terms.** Prepared by a committee of the British Association for the Advancement of Science. L. Dudley Stamp, Ed. Longmans, Green, London; Wiley, New York, 1961. xxix + 539 pp. \$10.

This work, in a genetic sense the 50-odd-year-old scion of a near-published glossary by Hugh Robert Mill, represents a contemporary terminological "blood, sweat, and tears." The issue is as fortunate as was the Battle of Britain, despite the "divergencies of usage between North American and English English."

The volume is a refreshingly honest evaluation of consent, dissent, and bewilderment relative to the import of the common, and not-so-common, terms of the geographical tongue. For the careful peruser, it also is an adventure in geographical terminology, from *aa*, on page 1, to *zoophyte*, on page 496. Those disposed to consult this volume

should be forewarned of the danger of habit formation, unless they are better disciplined than I am. Not only does one thing lead to another, but one term leads to another—and another.

A not unimportant portion of the work is comprised of three appendixes: one dealing with Greek and Latin roots, one listing geographical terms adopted from languages ranging from Afrikaans to Welsh, and a third which outlines the terminology of the geological time scale (especially in reference to British, Northwest European, and North American nomenclature). Significant, too, in an early portion of the volume, is a listing of standard works which were consulted. Included are references to conventional dictionaries and encyclopedias, but, more significantly, there are references to some of the classics and neoclassics in the realm of geographical literature.

Those responsible for the volume do not pretend fullness, let alone repletion, of treatment of geographical terms. Rather, they admit insufficiencies and imperfections, and they invite criticisms and additions.

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## Dielectrics

**Digest of Literature on Dielectrics.** vol. 23, 1959. Louis J. Frisco and Thomas D. Callinam, Eds. National Academy of Sciences-National Research Council, Washington, D.C., 1960. xiv + 423 pp. \$8.

A comprehensive digest of technical publications on the theory and applications of dielectrics and related subjects is prepared and published annually by the Digest Committee of the Conference on Electrical Insulation of the National Research Council. The 12 chapters of the 1959 digest, prepared by a group of 38 experts, cover all aspects of dielectrics and treat the subject from the viewpoint of the physicist, the chemist, and the engineer. Theoretical developments as well as progress in the discovery and application of dielectric materials are reviewed. The digest contains summaries and evaluations of technical advances which are described in periodicals and books published during 1959.

## New Books

### Biological and Medical Sciences

**The Arthropod Parasites of Vertebrates in Africa South of the Sahara (Ethiopian Region).** vol. 1, *Chelicerata*. F. Zumpt, Ed. South African Inst. for Medical Research, Johannesburg, S.A., 1961. 457 pp. Illus. R. 6.

**Bioelectricity.** E. E. Suckling. McGraw-Hill, New York, 1961. 244 pp. Illus. \$8.75.

**Chromatographic Reviews.** Progress in chromatography, electrophoresis, and related methods. vol. 3. Michael Lederer, Ed. Elsevier, Amsterdam, 1961 (order from Van Nostrand, Princeton, N.J.). 192 pp. Illus.

**Kenya Trees and Shrubs.** Ivan R. Dale and P. J. Greenway. Published by authority of the Government of the Colony and Protectorate of Kenya. Hatchards, London, 1961. 671 pp. Illus. \$17.50.

**Man, Time, and Fossils.** The story of evolution. Ruth Moore. Knopf, New York, ed. 2, 1961. 467 pp. Illus. \$6.95.

**On Growth and Form.** D'Arcy Wentworth Thompson. John Tyler Bonner, Ed. Cambridge Univ. Press, New York, 1961. 360 pp. Illus. \$5.95.

### General

**Computers and Common Sense.** The myth of thinking machines. Mortimer Taube. Columbia Univ. Press, New York, 1961. 141 pp. \$3.75.

**The Evolution of Civilizations.** Carroll Quigley. Macmillan, New York, 1961. 291 pp. Illus. \$5.95.

**Four Studies of War and Peace in This Century.** W. K. Hancock. Cambridge Univ. Press, New York, 1961. 136 pp. \$3.75.

**This Crowded Planet.** Margaret O. Hyde. McGraw-Hill, New York, 1961. 159 pp. Illus. \$3 (juvenile book).

**Time and the Physical World.** Richard Schlegel. Michigan State Univ. Press, East Lansing, 1961. 223 pp. Illus. \$7.50.

**Transactions of the Newcomen Society.** vol. 31, 1957-1958 and 1958-1959. Hefter, London, 1961. 373 pp. Illus. + 39 plates. 50s.

**The Two Netherlanders, Humphrey Bradley and Cornelis Drebbel.** L. E. Harris. Hefter, London, 1961. 227 pp. Illus. 44s.

### Mathematics, Physical Sciences, and Engineering

**Advances in Electronics and Electron Physics.** vol. 15. L. Marton, Ed. Academic Press, New York, 1961. 422 pp. Illus. \$13.

**Annual Review of Nuclear Science.** vol. 11. E. Segre, Ed. Annual Reviews, Palo Alto, Calif., 1961. 520 pp. Illus. \$7.

**Basic Principles of the Tracer Method.** Introduction to mathematical tracer kinetics. C. W. Shepard. Wiley, New York, 1962. 300 pp. Illus. \$8.

**Chemical Reactions in the Lower and Upper Atmosphere.** Interscience, New York, 1961. 400 pp. Illus. \$14.

**The Geology of Queensland.** D. Hill and A. K. Denmead, Eds. Melbourne

Univ. Press, Melbourne, Australia, 1961. 444 pp. Illus. + plates.

**Mechanical Properties of Engineering Ceramics.** W. W. Krieger and H. Palmour, III, Eds. Interscience, New York, 1961. 661 pp. Illus. \$21.

**Molecular Orbital Theory for Organic Chemists.** A. Streitwieser, Jr. Wiley, New York, 1961. 505 pp. Illus. \$14.50.

**Oeuvres Scientifiques Complètes.** Frédéric and Irène Joliot-Curie. Presses Universitaires de France, Paris, 1961. 915 pp. Illus.

**Photogeology.** V. C. Miller. McGraw-Hill, New York, 1961. 255 pp. Illus. \$13.50.

**Photometric Titrations.** J. B. Headridge. Pergamon, New York, 1961. 141 pp. Illus. \$7.50.

**Praktische Mathematik für Ingenieure und Physiker.** R. Zurmühl, Ed. Springer, Berlin, 1961. 564 pp. Illus. DM. 29.40.

**Quantum Theory.** vol. 2, *Aggregates of Particles* (486 pp. \$11). vol. 3, *Radiation and High Energy Physics* (413 pp. \$10). D. R. Bates, Ed. Academic Press, New York, 1962. Illus.

**Random Processes.** M. Rosenblatt. Oxford Univ. Press, New York, 1962. 218 pp. \$6.

**Rockets and Your Future.** Stanley Beitler. Harper, New York, 1961. 154 pp. Illus. \$3.50.

**Roger Joseph Boscovich.** Studies of his life and work on the 250th anniversary of his birth. Lancelot Law Whyte, Ed. Allen and Unwin, London, 1961. 230 pp. Illus. 32s.

**Vector Mechanics for Engineers.** pt. 1, *Statistics*. H. R. Nara, Ed. Wiley, New York, 1962. 467 pp. Illus. \$6.50.

## Reprints

**Mechanics.** J. P. Den Hartog. Dover, New York, 1961. 471 pp. Illus. \$2.

**Modern Theories of Integration.** H. Kestelman. Dover, New York, 1960. 318 pp. \$2.

**The Principles of Chemical Equilibrium.** Kenneth Denbigh. Cambridge Univ. Press, New York, 1961. 512 pp. Illus. \$2.95.

**Science and Music.** Sir James Jeans. Cambridge Univ. Press, New York, 1961. 258 pp. Illus. \$1.95.

**The Scientific Papers of J. Willard Gibbs.** vol. 1, *Thermodynamics*. 460 pp. vol. 2, *Dynamics, Vector Analysis and Multiple Algebra, Electromagnetic Theory of Light*. 292 pp. Dover, New York, 1961. Illus. \$2 each.

**The Story of X-Rays from Röntgen to Isotopes.** Alan Ralph Bleich. Dover, New York, 1960. 200 pp. Illus. \$1.35.

**Strength of Materials.** J. P. Den Hartog. Dover, New York, 1961. 331 pp. Illus. \$1.95.

**Supersonic Aerodynamics.** Edward R. C. Miles. Dover, New York, 1961. 266 pp. Illus. \$1.45.

**A Treatise on Hydrodynamics.** vol. 1, 276 pp. vol. 2, 343 pp. A. B. Bassett. Dover, New York, 1961. Illus. \$1.75 each.

**Vector Analysis.** Edwin Bidwell Wilson. Dover, New York, 1960. 454 pp. Illus. \$2.