

tinue to promote trade relations with the free world and particularly with the underdeveloped countries in Asia, the Middle East, and Africa; that Peking's foreign aid programs to countries in the Asian-African area will be expanded in the years immediately ahead; and that the psychological impact of Communist China's economic development will be widely felt throughout the underdeveloped areas of the world.

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Geochemical Methods of Prospecting and Exploration for Petroleum and Natural Gas. A. A. Kartsev, Z. A. Tabasarskii, M. I. Subbota, and G. A. Mogilevskii. English translation. Paul A. Witherspoon and William D. Romey, Eds. University of California Press, Berkeley, 1959. xxiii + 349 pp. Illus. \$12.50.

The Russian edition of this book was published in 1954 as a text for students and also as a practical guide for petroleum geologists. In addition to the general reviews on the geochemistry of petroleum formations and natural gas, the following exploration techniques are outlined in considerable detail: gas surveys, core-gas surveys, oil and gas logging, bitumen and bitumen-luminescence methods, hydrochemical techniques, water-gas and soil-salt surveys, and microbiological methods. The oxidation-reduction technique and geobotanical prospecting methods are discussed in passing.

The editors of this English translation are to be congratulated for making this work available to those who do not read Russian. The translation is excellent, and the reader is assisted by occasional editorial footnotes.

Fundamentally, geochemical prospecting represents an attempt to obtain, directly or indirectly, criteria for recognizing oil and gas fields. In view of the necessity for basing such criteria upon the geochemistry of petroleum and gas, I was disappointed to find many misstatements, contradictions, and misconceptions in the very first chapter. This shortcoming is balanced, however, by the excellent descriptions of stationary and portable equipment for gas analysis, by a particularly good and objective discussion of bitumens that I recommend to geologists working

with sedimentary deposits, and by an interesting description of microbiological exploration techniques.

The theoretical discussions of a number of techniques leave much to be desired. For example, decreases in redox potentials are attributed to the presence of hydrocarbons, but the fact that hydrocarbons are not ionized and cannot affect these potentials is overlooked.

I cannot help but wonder at the authors' obsession with regard to priority for the discovery, development, and use of many of the techniques described. The following statement illustrates this point: "The Americans unsuccessfully tried to appropriate the development and practical application of the [gas logging] method for themselves, ignoring the indisputable priority of Soviet investigators in this field." Such chauvinistic inserts add nothing to a scientific treatise and might not have been made if the authors had consulted more of the non-Russian literature.

Although there are shortcomings in the theoretical aspects of the book, the authors have carefully evaluated many of the parameters that can influence interpretation of experimental data; in one case 18 such factors are listed. Obviously, however, the ultimate value of these methods depends upon their usefulness in locating oil and gas, theoretical interpretations notwithstanding. In this respect, a number of examples are cited in which microbiological techniques have led to the discovery of oil at a depth of 1000 meters, or in which geochemical anomalies have been confirmed by later drilling. These are impressive results.

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Index of American Palms. Plates. B. E. Dahlgren. Field Museum of Natural History, Botanical Series, volume 14. Chicago Natural History Museum, Chicago, 1959. i + 412 pp. Illus. \$10.

The 412 plates that comprise this volume supplement the *Index of Palms* text published in 1936. The volume includes photographs of types and other historic specimens of palms made under the direction of J. Francis Macbride prior to 1940 at several European her-

baria—Copenhagen, Geneva, Herrenhausen (Hannover), Munich, Paris, and Vienna—and at the Museu Paraense Emilio Goeldi, in Brazil.

This is not a picture album showing photogenic palm trees but a collection of photographs of herbarium specimens, with the palm material pressed and dried, and reproductions of about 50 hitherto unpublished plates by F. M. Liebmann, a Danish student of palms who, a century ago, was professor of botany and director of the botanical garden at Copenhagen.

In general, the quality of the photographs and the offset printing is excellent, and the pictures can be considerably magnified to show the details of plant parts. Unfortunately, in several cases, focusing on the slightly raised plant parts resulted in a loss of sharpness, and the label data were lost. Within the usual limitations imposed when illustrations are substituted for the actual specimens, these photographs will be useful to taxonomists for reference purposes.

The earlier work in the same series, *Index of American Palms* (Publication 355, 1936) is out of print. It included a complete index of American palm genera and species, and lists of data—such as taxonomic literature, vernacular names, and geographic occurrence (prepared by B. E. Dahlgren), and a list of fossil palms (by A. C. Noé).

Dahlgren is now the dean of American palm specialists, and although for more than a decade he has been curator emeritus at the Chicago Museum of Natural History (formerly the Field Museum), he continues his studies in the palm family.

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The Amphetamines. Their actions and uses. Chauncey W. Leake. Thomas, Springfield, Ill., 1958. xv + 167 pp. \$4.50.

This book might be called a gem monograph. It is an easily read account of the amphetamines, written for the general reader as well as for the physician. Therapeutic details do not obtrude on the historical and philosophical story, which Leake has written in his fluent style.

After a charming dedication to Gordon Alles, the book describes the three

amphetamines, dextro, levo, and methyl derivative, and their relationships to the natural sympathetic mediators and synthetic relatives. Although there are major chemical and pharmacological qualities common to the entire group, accentuations of the cardiovascular, respiratory, and central nervous effects allow subdivision into these respective types. The amphetamines fit particularly well into the latter division, for they induce wakefulness, lessen fatigue, and lighten mood. In fact, they might be called the charter members of the new psychic energizer society. The mechanism of their action may be in part a blocking of amine oxidase, an enzyme which normally is free to destroy natural sympathomimetic agents, and in part direct stimulation of the normal receptors for the latter agents.

Much attention has been paid to the toxic potentialities of the amphetamines. Ordinarily the hazard is slight, but abuse may lead to excessive fatigue and possibly to mental disturbances. In animals, addiction is possible, though its existence in man is largely one of definition. This is discussed in the last chapter, "Sociological aspects," where both the author's observations in Japan and his broad general interests contribute to a most interesting assessment.

It is a pleasure to note the appearance of this volume on the eve of Chauncey Leake's elevation to the presidency of the American Association for the Advancement of Science. The book is characteristic of an able man of many interests.

WINDSOR CUTTING

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Applied Solar Energy Research. A directory of world activities and bibliography of significant literature. Jean Smith Jensen, Ed. Association for Applied Solar Energy, Phoenix, Ariz., ed. 2, 1959. xxi + 275 pp.

Applied Solar Energy is intended to provide a central catalog of the world literature on applied solar energy and of the activities of laboratories and individuals at present engaged in this area of research.

The scope of the bibliography has been somewhat restricted in this edition. Several related areas—"Control of the sun in architecture, day-lighting,

and . . . the architectural aspects of weather; the influence of the sun on weather; solar physics; and other sources of (unconventional) energy"—have been omitted, and only a few papers on photosynthesis are listed.

In gathering information for the section covering world research activities, questionnaires were mailed to research groups currently or recently engaged in solar research. The activities are grouped alphabetically by country and, for each country, alphabetically by name of the laboratory. The summary for each laboratory includes a brief description of projects completed since 1955 or now under way. In most cases, the scientists active in the program are listed.

The bibliography section is arranged by subject, and there is an author index. Under each subject, the arrangement is chronological; cross references are used. The literature searched included *Chemical Abstracts*, *Physics Abstracts*, *Applied Science and Technology Index*, *Electrical Engineering Abstracts*, *Fuel Abstracts*, and earlier bibliographies in the field. An attempt was made to fill in material published up to the end of 1954 (the cut-off date for the first edition) and to cite papers published since that date.

In the introduction, Farrington Daniels reviews the progress made since 1955 and comments on important advances. Daniels remarks, "Considering all the fields of activity in solar energy utilization that have been reviewed here, it is evident that considerable progress has been made in research and development during the four years since the Arizona Symposia in 1955."

New Books

Biological Psychiatry. Jules H. Masserman, Ed. Grune and Stratton, New York, 1959. 354 pp. \$9.75. The proceedings of the scientific sessions of the Society of Biological Psychiatry held at San Francisco in May 1958. pt. 1, "Neuroanatomy and neurophysiology"; pt. 2, "Clinical research"; pt. 3, "Psychopharmacologic research"; pt. 4, "Drugs in psychiatric therapy"; pt. 5, "Evaluations and discussions."

Chemical Process Principles. pt. 2, *Thermodynamics.* Olaf A. Hougen, Kenneth M. Watson, Roland A. Ragatz. Wiley, New York; Chapman and Hall, London, ed. 2, 1959. 680 pp. \$9.75.

College Arithmetic. W. I. Layton. Wiley, New York; Chapman and Hall, London, 1959. 212 pp. \$3.50.

The Concepts of Sigmund Freud. Bartlett H. Stoodley. Free Press, Glencoe, Ill., 1959. 286 pp. \$6.

Diagnostic Laboratory Hematology.

George E. Cartwright. Grune and Stratton, New York, ed. 2, 1958. 261 pp. \$6.75.

Dictionary of Aeronautical Engineering. J. L. Nayler. Philosophical Library, New York, 1959. 324 pp. \$10.

An Electronic Outline of Organic Chemistry. S. Horwood Tucker. Univ. of London Press, London, 1959. 494 pp. 63s.

The Encyclopedia of Witchcraft and Demonology. Rossell Hope Robbins. Crown, New York, 1959. 571 pp. \$7.50.

Engineering Mechanics Statics. Irving H. Shames. Prentice-Hall, Englewood Cliffs, N.J., 1959. 303 pp. \$4.75.

Exotic Aquarium Fishes. A work of general reference. William T. Innes. George S. Myers, Ed. Innes, Philadelphia, Pa., ed. 19, 1959. 541 pp. \$9.75. Fishes that have proved their worth as aquarium pets are described and illustrated; fishes that cannot be kept in aquariums or that cannot be obtained are excluded. Information on the care of fish is included and chapters are devoted to plants, classification of fishes, and collecting and transporting of fishes.

Extractive Metallurgy. Joseph Newton. Wiley, New York; Chapman and Hall, London, 1959. 539 pp. \$9.75.

Foundry Engineering. Howard F. Taylor, Merton C. Fleming, John Wulff. Wiley, New York; Chapman and Hall, London, 1959. 414 pp. \$9.75.

The Heinz Handbook of Nutrition. A comprehensive treatise on nutrition in health and disease. Published for H. J. Heinz Co. McGraw-Hill, New York, 1959. 449 pp. \$5.75.

Metabolism in the Rumen. E. F. Anni-son and D. Lewis. Methuen, London; Wiley, New York, 1959. 184 pp. \$2.75.

The Moon Car. Hermann Oberth. Translated by Willy Ley. Harper, New York, 1959. 98 pp. \$2.95.

Narcotics. Lingo and lore. J. E. Schmidt. Thomas, Springfield, Ill., 1959. 213 pp. \$4.25.

The Natural Thing. The land and its citizens. Pieter W. Fosburgh. Macmillan, New York, 1959. 263 pp. \$4.75. A collection of essays on conservation. Fosburgh was editor of the *New York State Conservationist* for 10 years; some of the essays are expanded and rewritten material from that publication.

Neuropharmacology. Transactions of the fourth conference, 25-27 September 1957, Princeton, N.J. Harold A. Abramson, Ed. Josiah Macy, Jr. Foundation, New York, 1959. 285 pp. \$5.

New Dimensions of Flight. Lewis Zarem. Dutton, New York, 1959. 256 pp. \$4.50.

Nomography. A. S. Levens. Wiley, New York; Chapman and Hall, London, ed. 2, 1959. 304 pp. \$8.50.

Normal Children and Mothers. Their emotional opportunities and obstacles. Irving D. Harris. Free Press, Glencoe, Ill., 1959. 297 pp. \$6.

University Mathematics. A textbook for students of science and engineering. Joseph Blakey. Philosophical Library, New York, ed. 2, 1959. 581 pp. \$10.

The Vegetation of Wisconsin. An ordination of plant communities. John T. Curtis. Univ. of Wisconsin Press, Madison, 1959. 668 pp. \$7.50.