sources of a scientific method. Much of current research in this area is dedicated to demonstrating precisely the opposite.

SOL SAPORTA
Department of Spanish and Portuguese, Indiana University

Insect Life in the Tropics. T. W. Kirkpatrick. Longmans, Green, New York, 1957. xiv + 311 pp. Illus. $7.

In the past century, science, and with it entomology, has become an area for the expert. The rigorous code of the latter, especially in the publication of results, has all but driven the amateur natural historian from the field. Yet, in the opinion of many scientists, the amateur is the primordium of the professional and, therefore, he should be attended. The large body of popular writings on science appearing under recognized names indicates that he is, and that popular works increasingly enjoy the regard of professionals.

Now this excellent little volume on tropical entomology joins the distinguished books of Hoyle, Gamow, and many others in its encouragement of the amateur. It may be too good for him. The opening chapters of the book are organized on the plan of a textbook on entomology; insect structure and classification are given—briefly, it is true, but with little sacrifice of technical accuracy to so-called popular appeal. The sections that follow comprise an entertaining potpourri of facts about tropical insects, in chapters rather loosely headed "Development," "Reproduction," "Food and feeding," "Defense and protection," and "Insect communities." These make delightful reading, although the expert will be mildly irritated by the lack of specific citations to literature and of rigid subject categories, in which the author had to make some compromises for the sake of brevity. The many diagrams, photographs, and drawings are well done. This book is highly recommended.

JOSEPH H. YOUNG
Department of Zoology, Tulane University

Thermodynamics and Statistical Mechanics. A. H. Wilson. Cambridge University Press, New York, 1957. xv + 495 pp. Illus. $9.50.

The author states that his aim is to give a somewhat critical account of thermodynamics and statistical mechanics intended mainly for theoretical physicists. However, the lucidity, charm, and succinctness of his style will doubtless appeal to a wider audience. Many physical chemists, physical metallurgists, and experimental physicists or graduate students needing a review of these fields will be included.

The initial four chapters (90 pages) are devoted to thermodynamics, starting with two on the classical development of the first and second laws of thermodynamics from first principles. The presentation is so clear and easy to follow that superior undergraduates could use it for collateral reading, even in a first course. Thermodynamic functions and the myriad equations in which they appear are neatly treated next, and Caratheodory's axiomatic foundation of thermodynamics is clearly presented in the fourth chapter.

Chapters five and six (88 pages) discuss statistical mechanics and some of its simple applications (general principles, connection with thermodynamics, fluctuations, quantum statistics, perfect gases, crystalline solids, radiation). In library copies, these pages will probably be particularly well worn by generations of graduate students. The next chapter, on the third law of thermodynamics, rounds out the discussion of general laws and their most immediate applications.

The last four-sevenths of the book (280 pages) comprise seven chapters, on applications to imperfect gases, heterogeneous equilibrium, electric and magnetic phenomena (mostly solid state), gas mixtures and chemical reactions, solutions, electrochemical systems, and some additional topics in solids (rubber and order-disorder). They are all fine graduate-level introductions, but as the book is a text rather than a reference work, those particularly interested in special topics may want to consult the references at the ends of the chapters. These are fairly current, and though far from exhaustive, include many important papers, texts, and reviews. Topics traditionally in the field of physical chemistry are treated in sufficient detail to satisfy most physicists, but chemists would probably want to go further. Though many topics in solid-state physics are treated (besides those cited, there are discussions of ferroelectricity, paramagnetic substances, ferromagnetism, antiferromagnetism, and superconductivity in the chapter on electric and magnetic phenomena), the theory of lattice defects, semiconductors, and thermionic emission is omitted, and theory of metals (treated by the author in another book) is barely touched. While cooperative phenomena might perhaps be treated most elegantly together, four such cases are discussed in the chapter on electric and magnetic phenomena, one in the chapter on additional topics in solids, and one (superfluidity) in the chapter on heterogeneous equilibrium, with a bit on rotational transitions tucked away in the chapter on the third law. But this is a minor matter when balanced against the eminent success of the author's attempt to achieve his stated aims.

A number of misprints were found: "constant-value" appears where "constant-volume" should be (second paragraph, page 70); a subscript "II" should be "I" on page 27b, equation 9.42.2; summation over i should be indicated in the second term on the right of equation 11.321.1 on page 366; the reference to "fig. 8.9 of page 226" above table 11.1 on page 370 should be to figure 8.8 on page 224; on page 436, line 2, "grounds" should be changed to "groups," and on page 448 the "lo" has disappeared from parallelopiped.

JEROME ROTHSTEIN
Edgerton, Germeshausen & Grier, Boston, Massachusetts

Induced Delusions. The psychopathy of Freudism. Coyne H. Campbell. Regent House, Chicago, 1957. xx + 189 pp. $4.

This book is an attempt to "expose" psychoanalysis and to eject psychoanalytic theory from medical school curricula. The author believed that analytic concepts and theories were fantasies and hypnotically conditioned delusions of no scientific or therapeutic value. The entire volume is replete with strongly emotional statements which are frequently confused, contradictory, and inaccurate. It is much too revealing in ways that were not intended. It cannot be recommended for any serious reader.

DANA L. FARNSWORTH
Harvard University

Dangerous Properties of Industrial Materials. A completely revised and enlarged edition of *Handbook of Dangerous Materials*. N. Irving Sax. Reinhold, New York; Chapman & Hall, London, ed. 2, 1957. vii + 1467 pp. $22.50.

In this encyclopedic reference volume the author and his assistants have presented a rewritten and enlarged version of Sax' *Handbook of Dangerous Materials* (1951). This volume discusses 8500 materials in approximately 1500 pages, whereas the earlier volume devoted 850 pages to 5000 materials.

The objective of the earlier volume was to provide a conveniently arranged reference work on the hazardous properties of chemical compounds and other industrial materials with emphasis on what precautionary measures should be taken to handle them safely.

The 12 sections comprising the enlarged edition are conveniently thumb-

indexed, and carry the following titles: "Toxicology," "Ventilation control," "Personnel protection and personal hygiene," "Atmospheric pollution," "Radiation hazards," "Industrial fire protection," "Storage and handling of hazardous materials," "Reactor safeguards," "Allergic disease in industry," "General chemicals," "Shipping regulations," and "Index to synonyms."

The largest section, over 1000 pages, is the one on general chemicals. The various materials are alphabetically arranged and presented under such subjects as synonym, description, formula, physical constants, toxic hazard rating, fire hazard, explosion hazard, disaster control, ventilation control, personal hygiene, and storage and handling. The section on shipping regulations, of some 160 pages, is the next largest in size. This section reproduces appropriate text, tables, and shipping labels from the regulations of the Interstate Commerce Commission (Bureau of Explosives). The remaining sections, varying in length from 8 to 56 pages, bring together additional helpful information related to safety.

This handbook should be found useful not only by persons responsible for producing and maintaining a safe and healthful occupational environment but also by editors, technical writers, investigators, and others engaged in providing information for the improvement of the work environment.

W. M. GAFAFER
Occupational Health Program,
U.S. Public Health Service

New Books

The Voyage of the Lucky Dragon. Ralph E. Lapp. Harper, New York, 1958. 213 pp. $3.50.

The Bacteriology of Tuberculosis. Egons Darzins. University of Minnesota Press, Minneapolis, 1958. 499 pp. $10.

Nuclear Masses and Their Determination. Proceedings of the conference held in the Max-Planck-Institute für Chemie, Mainz, 10–12 July 1956. H. Hintenberger, Ed. Pergamon Press, New York and London, 1957. 276 pp. $14.

Ion-Exchange Resins. J. A. Kitchener. Methuen, London; Wiley, New York, 1957. 116 pp. $2.

The Strategy of the Genes. A discussion of some aspects of theoretical biology. C. H. Waddington. Macmillan, New York, 1957. 271 pp. $4.

The Grasshoppers and Locusts (Acridoidea) of Australia. vol. III, *Family Acrididae: Subfamily Cyrtacanthacridinae. Tribes Oxyini, Spathosternini, and Praxibulini. James* A. G. Rehn. Commonwealth Scientific and Industrial Organization, Melbourne, Australia, 1957. 273 pp.

The Quest for Identity. Allen Wheelis. Norton, New York, 1958. 250 pp. $3.95.

God's World and You. O. A. Battista. Bruce, Milwaukee, Wis., 1957. 244 pp. $3.95.

Bridges and Their Builders. David B. Steinman and Sara Ruth Watson. Dover, New York, rev. ed., 1957. 417 pp. $1.95.

Selections from Modern Abstract Algebra. Richard V. Andree. Holt, New York, 1958. 224 pp. $6.50.

Electrical Discharges in Gases. F. M. Penning. Macmillan, New York; Philips, Eindhoven, Netherlands, 1958. 83 pp. $3.

Plant Design and Economics for Chemical Engineers. Max S. Peters. McGraw-Hill, New York, 1958. 522 pp. $11.

Biophysical Chemistry. vol. I, *Thermodynamics, Electrostatics, and the Biological Significance of the Properties of Matter.* John T. Edsall and Jeffries Wyman. Academic Press, New York, 1958. 714 pp. $14.

Magnesium. The fifth major plant nutrient. A. Jacob. Translated from the German by Norman Walker. Staples Press, London, 1958. 171 pp. 40s.

Chemistry of Carbon Compounds. A modern comprehensive treatise. vol. IV, pt. A, *Heterocyclic Compounds.* E. H. Rodd, Ed. Elsevier, New York, 1957 (order from Van Nostrand, Princeton, N.J.). 833 pp. $28.

Around the World in 90 Minutes. The fabulous true story of the man-made moons. David O. Woodbury. Harcourt, Brace, New York, 1958. 248 pp. $5.75.

Film Formation, Film Properties, and Film Deterioration. A study by the Research Committee of the Federation of Paint and Varnish Production Clubs. Charles R. Bragdon, Ed. Interscience, New York, 1958. 437 pp. $9.75.

Science and the Creative Spirit. Essays on humanistic aspects of science. Karl W. Deutsch, F. E. L. Priestley, Harcourt Brown, David Hawkins. Harcourt Brown, Ed. University of Toronto Press, Toronto, Canada, 1958. 192 pp. $4.50.

Explorations in Role Analysis: Studies of the School Superintendency Role. Neal Gross, Ward S. Mason, Alexander W. McEachern. Wiley, New York; Chapman & Hall, London, 1958. 393 pp. $8.75.

Science in Everyday Things. William C. Vergara. Harper, New York, 1958. 316 pp. $3.95.

Fundamentals of Mathematics. M. Richardson. Macmillan, New York, rev. ed., 1958. 525 pp. $6.50.

General Chemistry. A first course. L. E. Young and C. W. Porter. Prentice-Hall, Englewood Cliffs, N.J., ed. 4, 1958. 639 pp. $6.75.

Better Report Writing. Willis H. Waldo. Reinhold, New York; Chapman & Hall, London, 1957. 238 pp. $4.75.

Distributional Check-List of the Birds of Mexico. pt. II, *Pacific Coast Avifauna, No. 33.* Cooper Ornithological Society, Berkeley, Calif., 1957. 436 pp.

Physico-Chemical Effects of Pressure. S. D. Hamann. Academic Press, New York; Butterworths, London, 1957. 246 pp. $8.50.

Structure Reports, 1951. vol. 15. A. J. C. Wilson, Ed. International Union of Crystallography and Oosthoek, Utrecht, Netherlands, 1957. 588 pp.

Miscellaneous Publications

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

The Relationships between Electroencephalographic and Psychological Data in Normal Adults. P. F. Werre. Universitaire Pers Leiden, Leiden, Netherlands, 1957 (order from Martinus Nijhoff, Lange Veerhout 's-Gravenhage). 152 pp. F. 15.

Public Law Problems in India. A survey report. Proceedings of a conference held at the Stanford Law School, 15 July–16 August 1957. Lawrence F. Ebb, Ed. Stanford University, Stanford, 1957. 194 pp. $2.50.

Notes on Some Brazilian and Other Leguminosae. Contributions from the U.S. National Herbarium, vol. 29, pt. 12. Arturo Burkart. 7 pp. *Diagnostic Characteristics of the Fruits and Florets of Economic Species of North American Sporobolus.* vol. 34, pt. 1. Vera Lyola Colbry. 24 pp. Smithsonian Institution, Washington, D.C., 1957.

The Medical and Veterinary Importance of Cockroaches. Smithsonian Misc. Collections, vol. 134, No. 10. Louis M. Roth and Edwin R. Willis. 147 pp. *Permian Brachiopods from Central Oregon.* vol. 134, No. 12. G. Arthur Cooper. 79 pp. *Morphology and Taxonomy of the Foraminiferal Genus Pararotaliz Le Calvez, 1949.* vol. 135, No. 2. Alfred R. Loeblich, Jr., and Helen Tappan. 24 pp. *Mineralogical Studies on Guatemalan Jade.* vol. 135, No. 5. William F. Foshag. 60 pp. *A Revised Interpretation of the External Reproductive Organs of Male Insects.* vol. 135, No. 6. R. E. Snodgrass. 60 pp. Smithsonian Institution, Washington, D.C., 1957.

Federal Grants and Contracts for Unclassified Research in the Life Sciences. Fiscal year 1956. National Science Foundation, Washington 25, 1957. 241 pp.

The Old Copper Culture and Keweenaw Waterway. Fieldiana: Anthropology, vol. 36, No. 8. George I. Quimby and Albert C. Spaulding. 13 pp. $0.40. *New Birds from the Philippines.* Philippine Zoological Expedition, 1946–1947. Fieldiana: Zoology, vol. 42, No. 2. Austin L. Rand and D. S. Rabor. 6 pp. $0.15. Chicago Natural History Museum, Chicago, 1957.

Protoplasmatologia, Handbuch der Protoplasmaforschung. Band I, *Grundlagen*; 1956; 1956. 162 pp. $12.40. Band II, *Cytoplasma*; 1957. 43 pp. $7.40. L. V. Heilbrunn and F. Weber, Eds. Springer, Vienna.

Anthropological Papers, Numbers 49–56. Bureau of American Ethnology Bull. 164. Smithsonian Institution, Washington, 1957 (order from Supt. of Documents, GPO, Washington 25). 355 pp. $2.75.

Geochemical Prospecting. General reconnaissance methods. Nalin R. Mukherjee and Leo Mark Anthony. University of Alaska, College, 1957. 81 pp. $2.

Danish Review of Game Biology. vol. 3, pt. 2. R. Spärck and H. M. Tamdrup, Eds. Schultz, Copenhagen, Denmark, 1957. 131 pp.