stimulating suggestions are made concerning solutions of problems in inorganic chemistry.

The author's style is concise and to the point; consequently, some points lack the clarity that is often so desirable for readers who are not advanced students of the subject. However, the references not only to original articles and review articles, but also to texts at various levels outline the task for the reader who wishes to pursue the subject.

Increasing emphasis on inorganic chemistry assures this timely volume of a welcome in the libraries of inorganic chemists, spectroscopists, and solid state scientists, but to realize maximum benefit from the book, readers should have some familiarity with group theory, molecular orbital theory, and ligand field theory.

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Chemical Laboratories

Laboratory Planning. Harry F. Lewis, Ed. Reinhold, New York; Chapman and Hall, London, 1962. xiii + 522 pp. Illus. $20.

Laboratory Organization and Administration. K. Guy. Macmillan, London; St. Martin's, New York, 1962. xiv + 386 pp. Illus. $12.

The book edited by Harry Lewis deals almost entirely with laboratory planning, construction, and design; Lewis included the expertise of nearly 30 specialists on such subjects as the selection of sites, the materials of construction, utilities, and furniture (for both office and laboratory). Of particular value is a consensus on the most desirable layouts for laboratory and office, which is based on a survey of more than 100 modern industrial and academic laboratories.

A special section is devoted to safety, and even such specialized facilities as high pressure and radioisotope laboratories are described. Laboratories for various academic functions, including teaching and research, are separately discussed. A recently completed chemical engineering building, for which the plans were based on an exhaustive analysis of many industrial and academic research facilities, is described in detail. Among the many minutiae are tabulations of the amount of office space (the number of square feet), allotted to the average chemist and chemical engineer in industrial and academic institutions.

This book should prove to be indispensable to both administrative and technical personnel who are responsible for planning new construction or for planning the modification of existing facilities; it should also be most useful to the scientist and engineer in their communication with the architect and constructor.

One problem in current design that remains unresolved in this book is the necessity for anticipating changes that will occur with time in the function of laboratories. For example, in instructional chemical engineering laboratories, the vogue for large-scale industrial equipment (for both research and teaching) is waning and may disappear in the next decade; thus, the whole complexion of the designing of facilities may change markedly. The entire topic of flexibility is barely touched upon, but it must play an extremely important role in effective planning.

Guy's *Laboratory Organization and Administration,* something of a compendium for the laboratory technician or for the person who directs the chemistry or chemical engineering laboratory, runs the gamut from laboratory lighting (where the theory of illumination is dispensed with in one page) to running a stockroom and a movie projector. Many handy bits of information obtained from firsthand experience are included. Because the coverage is wide, the treatment necessarily tends to be superficial. However, a guide for further study of each subject is provided in the ample bibliography provided with each chapter.

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Avifauna of Asia

A Synopsis of the Birds of India and Pakistan, Together with Those of Nepal, Sikkim, Bhutan, and Ceylon. Sidney Dillon Ripley II. Bombay Natural History Society, Madras, India, 1961. xxxvi + 702 pp. Rs. 25.

The Indian subcontinent's very rich avifauna is comprised of more than 2000 species and subspecies. Potential investigators need an accurate, up-to-date tabulation of such a large segment of the world's ornis, and in this case, the need for review and tabulation was particularly urgent, since more than three decades have elapsed since publication of the last comprehensive list (E. C. Stuart Baker's list). Not only has our knowledge increased greatly with respect to the distribution, occurrence, and relationships of Indian birds, but numerous changes have been made in taxonomic approaches and in the importance attached to much related data. Thus, there was a real need for reappraisal and a new listing of the birds of this vast portion of Asia.

Ripley's book is based on long and extensive study and experience, both in the field and in museums, and it gives every promise of meeting the need most adequately. It seems safe to predict that all who study the birds of southern Asia will use his book as their base of departure, and it also seems safe to predict that they will find that the book is a sound, reliable summation of the subject.

No book dealing with so vast a number of birds can possibly agree in all details with other recent technical treatises. Thus, to single out but one example, Ripley considers *Estrilda* and *Lonchura* as members of the Ploceidae, although other recent works have erected the family Estrildidae for them and their close relatives. In this matter, I agree with Ripley.

In addition to its digest of our current knowledge of this great fauna, this book will also be useful in clarifying the maze of name changes that were made when the Indian States reorganized in 1956. The maps afford a clear presentation of these complicated geographic alterations.

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Notes

Dermatology

Eccrine Sweat Glands and Eccrine Sweating (Pergamon, London, 1962. 266 pp. $10), edited by William Montagna, Richard A. Ellis, and Alene F. Silver, is the third volume in the series Advances in Biology of Skin, a series that provides up-to-date information on the form and function of the human skin and its appendages. It is also the proceedings of a symposium on the biology of the skin, which was held at Brown University. The work at the

university's skin research center has a broad biological orientation, and each year the center conducts a well-organized symposium at which the results of its own work and that carried on at similar centers is presented informally.

The current monograph contains basic information on the structural and ultrastructural detail of eccrine sweat glands, on their role in thermoregulation, and on their biochemical and pharmacological reactions. The editors have attempted to relate the form and function of these skin appendages, particularly in the light of newer knowledge of their ducts and of the mechanisms by which injuries to them are repaired.

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Physical Chemistry

In **Calculations in Physical Chemistry** (Wiley, New York, 1962. 217 pp. $4.50), the authors, B. W. V. Hawes and N. H. Davies, present approximately 400 problems that require numerical solutions. The topics covered, which range from nuclear chemistry, kinetic theory, phase rule, and thermodynamics to chemical kinetics and molecular structure, represent the material in a rigorous 1-year course in physical chemistry. Many of the problems appear to have been written for this book or for classes taught by the authors, others have been taken from the examination papers of students at a number of British universities, and a number have been taken from work published in the chemical literature, though in some areas—for example, the solid state—all, or almost all, have been designed specifically for class use.

The subject matter covered is well within the scope of the typical undergraduate course taught in this country, though most of the problems require independent thinking, not the mere mechanical substitution of numbers in equations. The book is reasonably self-contained: for many of the problems the authors provide notes and hints on how to proceed with the numerical solutions, and in most cases any needed equations are provided. Logarithm tables and answers for all of the problems are provided. It is perhaps unfortunate that a number of solutions are not worked out in detail in each chapter, since such examples would provide the small amount of encouragement needed to persuade many students to take the plunge on their own. This is, however, a small fault.

This is a useful addition to the well-known books by Wolfenden and by Guggenheim and Prue and should be helpful in teaching undergraduate classes in physical chemistry. The book is well printed and reasonably priced.

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High School Mathematics

Geometric Transformations by I. M. Yaglom, translated from the Russian by Allen Shields (Random House, New York, 1962. 140 pp. Paper, $1.95), is a delightful book that can be read by a bright high school student with a background in geometry. It is one of the volumes in the School Mathematics Study Group series, which are intended "to make some important mathematical ideas interesting and understandable to a large audience of high school students and laymen."

Although Euclidean geometry is characterized as the study of those properties of figures that are left unchanged by distance-preserving transformations (that is, isometries), one does not usually learn about these transformations until he studies coordinate geometry. Yaglom shows how much the isometries can contribute to the study of geometry without the aid of coordinates. Coordinates are mentioned only in a footnote as a means of clarifying the meaning of distance.

The book contains a substantial list of problems that can be solved with the aid of geometric transformations. The problems are challenging, and many of them contain results that are unexpected. (Solutions are given at the end of the book.) If the reader is dissatisfied with the standard of rigor at certain points, he should be able to furnish the additional details of proof himself. The author has omitted these details in order to avoid a ponderous style. The reader is given a new perspective of the meaning of geometry and the meaning of congruence. The translation is sufficiently smooth so that one is unaware that the volume is a translation.

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New Books

General

Administering the National Defense Education Act. *The Economics and Politics of Public Education*, No. 8. Sidney C. Sufrin. Syracuse Univ. Press, Syracuse, N.Y., 1963. 86 pp. Paper, $1.75.

Aus Jahrmillionen. Tiere der Vorzeit. Arno Hermann Muller and Helmut Zimmerman. Fischer, Jena, Germany, 1962. 417 pp. Illus. DM. 30.

Book Publishing in the U.S.S.R. Report of the delegation of United States book publishers visiting the U.S.S.R., August–September 1962. Curtis G. Benjamin *et al.* American Book Publishers Council, New York, 1963. 118 pp. Paper.

Cost and Quality in Public Education. *The Economics and Politics of Public Education*, No. 5. Harold F. Clark. Syracuse Univ. Press, Syracuse, N.Y., 1963. 64 pp. Paper, $1.75.

Exploring the Universe. American Foundation for Continuing Education. Louise B. Young, Ed. McGraw-Hill, New York, 1963. 487 pp. Illus. $6.95.

Fourcroy. Chemist and revolutionary, 1755–1809. W. A. Smeaton. Heffer, Cambridge, England, 1962. 312 pp. Illus. $6.

The General Practitioner. A study of medical education and practice in Ontario and Nova Scotia. Kenneth F. Clute. Univ. of Toronto Press, Toronto, Canada, 1963. 582 pp. $12.

The Genetic Code. Isaac Asimov. Orion Press, New York, 1962. 187 pp. Illus. $3.95.

Higher Education and the Federal Government. Charles G. Dobbins, Ed. American Council on Education, Washington, D.C., 1963. 136 pp. Paper, $2. Nine papers presented at ACE's 45th annual meeting, Chicago, Ill. (1962).

The Man Who Found Out Why. The story of Gregor Mendel. Gary Webster. Hawthorn, New York, 1963. 188 pp. Illus. $2.95 (juvenile).

Missions dans le Pacifique. Récifs coralliens, huîtres perlières. Gilbert Ranson. Lechevalier, Paris, 1962. 108 pp. Illus. NF. 20.

The Myth of Simplicity. Problems of scientific philosophy. Mario Bunge. Prentice-Hall, Englewood Cliffs, N.J., 1963. 253 pp. Illus. Trade ed., $7.95; text ed., $5.95.

New Sources of Energy and Energy Development. Report on the U.N. conference on new sources of energy, Rome (1961). United Nations, New York, 1962. 71 pp. Paper, 75¢.

The Practice of Silviculture. David Martyn Smith. Wiley, New York, ed. 7, 1962. 586 pp. Illus. $10.95.

The Restless Atmosphere. F. K. Hare. Harper and Row, New York, 1963 (© 1953). 192 pp. Illus. Paper, $1.35.

Satellites, Rockets, and Outer Space. Willy Ley. New American Library, New York, revised ed., 1962. 128 pp. Illus. Paper, 60¢.

Science for the Non-Scientist. A. R. Patton. Burgess, Minneapolis, Minn., 1962. 130 pp. Illus. Paper, $2.50.

The Scientific Life. Theodore Berland. Coward-McCann, New York, 1962. 316 pp. $5.75.