dines. The contributing authors are all well acquainted with their respective fields. If the quality of the sections is not uniform, the variation is due more to available subject matter than to presentation. The more-than-200-page section on pyridines by H. S. Mosher deserves particular comment, since the results in this most prolific field have been amply covered. If any criticism is to be voiced, it is that there is no chapter in which the comparisons of similar ring systems are collected. It may be that later volumes will contain such comments.

Although the type appears to be smaller than average, the typography is good, with adequate leading between the lines. Because of the amount to be compressed into one volume, the reader may experience some eye-strain not encountered in less meaty volumes. The format is excellent, and considering the size, the subject, and the times, the price seems very reasonable.

Arnold Weissberger, as consulting editor, has projected the publication of a 28-volume series covering the field of heterocyclic chemistry, of which this is the first. If the remainder come up to the high standards set by this volume, the series will be a welcome adjunct to any library.

The field of phosphorus, arsenic, antimony, bismuth, and silicon heterocycles is discussed most thoroughly. Attempts are made to correlate the findings from element to element in Group V, with the greatest burden falling on the arsenicals as the best-known of the group. In some instances too much emphasis has been placed on the results obtained by analogy, but in general the presentation is excellent. Some question can be raised as to the use of double bonds in postulating structures with heavier elements, but, since the electronic structure of no compounds of these elements is known with certainty, the question is academic. The electronic interpretations on the whole are good, although frequently they need translation to the American idiom of Pauling, Price, *et al.* to be completely understood. Dr. Mann is at his best in those instances wherein he has had personal experience, and the contrast in other sections is often striking. Although this results in an unevenness in presentation, it is to be preferred to the uncritical approach of many who review a field of chemistry without knowledge of its particulars. The decision to limit the term "heterocycle" to rings containing at least one carbon is to be regretted, since some of the chemistry thus omitted is admirably suited for inclusion.

In the introduction some of the nomenclature difficulties are discussed. Although the British and *Chemical Abstracts* systems differ, as discussed by Dr. Mann, the discrepancies are even deeper if one examines the German system, or lack thereof. The author wisely selected the *Chemical Abstracts* system as being the more consistent but fails to mention the pitfalls and inconsistencies in this. The nomenclature problem becomes more complex when heterocyclic names are considered. Dr. Mann has done well in following the *Chemical Abstracts* system, which is foreign to him, and only on rare occasion does a British system name occur. German names slip in more frequently, and the *Ring Index* system is never entirely mastered. The use of the substitutive *arsa* is abused by making it replace $=CH-$ on occasion and $-CH_2-$ on others. Without prior knowledge of the compounds, some of the ring names would be confusing. Fortunately, structural formulas are used liberally.

References are plentiful, although they are by no means complete. Sufficient source references are given, however, to enable the reader to consult a large portion of the original literature. Typography is excellent and the format good. The addition of biological references makes the book an excellent reference work for those who would acquire a working knowledge of the subject matter. It is to be hoped that the price established on this volume is not indicative of the rest of the series. If so, the more extensive subjects will be beyond all reasonable cost.

C. KENNETH BANKS

Research Laboratory
Metal & Thermit Corporation

Natural Regions of the U.S.S.R. L. S. Berg. Olga Adler Titelbaum, Translator. New York: Macmillan, 1950. 436 pp. $10.00.

The American Council of Learned Societies has made available in English one of the best books ever written on the natural geography of the U.S.S.R. by encouraging Miss Titelbaum to translate L. S. Berg's *Priroda S.S.S.R.* Although Lev Semenovich Berg's greatest interest was in the field of ichthyology, he published more than 480 books and articles on geology, geobotany, zoogeography, and related subjects. In over 50 years of field work he traveled and did field research in almost every part of the Soviet Union.

Geography has been a well-established discipline in Russia from Czarist days, and Berg's publications and interest in the field made him a leader in the Russian Geographical Society and recipient of many honors and medals. He made a contribution to geographical methodology and theory by his scientific approach to the problem of natural areas. Repeating patterns of the natural phenomena meticulously observed, catalogued, and analyzed finally establish for the U.S.S.R. seven landscape zones for the great lowlands. Berg also establishes twelve mountain landscapes, with varying degrees of vertical zonality.

After the zonal boundaries have been confirmed Berg approaches the areas systematically by a discussion of climate, relief, soils, vegetation, and fauna. Morrison, Nikiforoff, and Miss Titelbaum have carefully checked and supplied both the English and Latin names for the plants and animals. This procedure has enabled the translators to check the Russian and English equivalents with Berg's use of the Latin. About half of the book is devoted to a very clear discussion of the vertical zonations of climates, soils, and vegetation in the mountains in separate parts of the Soviet Union.

We are particularly indebted to Berg for the climatic statistics in both the latitudinal and vertical zones and the discussion of the temperature and precipitation controls on the spread of the various plant associations. One

sometimes wishes for a climatic map of the Soviet Union, but perhaps it is better procedure to combine all the natural features into landscape zones. This may be Berg's greatest contribution to geography and may point the way so that geographers in other areas can limit and divide their studies more sharply into physical and cultural regions, with deeper penetration into each, as Berg has done for the Soviet Union on the physical side.

JOSEPH E. WILLIAMS

Department of Geography
Stanford University

Reviewed in Brief

A History of Biology: A General Introduction to the Study of Living Things. Rev. ed. Charles Singer. New York: Henry Schuman, 1950. 579 pp. $5.00.

All who are interested in the history of science will be glad to see Singer's *History of Biology* revised and back in print. The author's emphasis on biological problems makes his approach stimulating, although his frank dissatisfaction with a mechanistic interpretation of life inserts a bias that numerous readers will deplore. But Singer's scholarship is broad, and adequate to cover a multitude of minor failings, were there such. In general, his treatment of his subject falls between that of Nordenskiöld, which is burdened with detail and overbiased in several respects, and that of Jean Rostand, who excels in presenting the major problems of biology in an up-to-date and most readable way.

Part I of the present book deals with "The Older Biology" and Part II with "The Historical Foundations of Modern Biology"; Part III concerns the "Emergence of Main Themes of Contemporary Biology." These are selective rather than all-inclusive and fail to give a fully rounded picture of modern biology. "Cell and Organism," the "Essentials of Vital Activity," the "Relativity of Functions," "Biogenesis and Its Implications," the "Development of the Individual," "Sex," and the "Mechanism of Heredity" are included, but such fields as endocrinology and biochemistry are represented scantily or not at all. The chief criticism to be made of the book is that its story ends too soon, around 1900 in many fields and around 1920 at the most. Even the "Theory of the Gene," which has been brought up to date better than most sections, lacks a good deal in breadth and perspective. It would be of great assistance to users of the book if the index included subjects as well as personages. In spite of all such limitations, this is a highly worthy book for the shelf of any biologist.

The Practice of Medicine. 5th ed. Jonathan Campbell Meakins. St. Louis, Mo.: Mosby, 1950. 1,558 pp. $13.50.

In this most recent edition of a well-known textbook of medicine, the author has made a valiant attempt to bring all the chapters up to date. The chapter on the ductless glands has been largely rewritten, and the sparse section of former editions on psychiatry has been replaced by one on psychosomatic medicine prepared by Frederick R. Hanson. Topics pertaining to the treatment of infections, formerly somewhat scattered throughout the text, have been regrouped in a more logical order under the principles of chemotherapy and antibiotics and the indications and manner of their use.

The book is well bound and its type clearly legible. The numerous illustrations, including 50 in color, have been carefully chosen and effectively complement the clarity of the text. This edition can be heartily recommended as a valuable addition to every physician's library.

Scientific Book Register

Physico-Chemical Constants of Pure Organic Compounds. J. Timmermans. New York: Elsevier, 1950. 693 pp. $12.50.

Variation and Evolution in Plants. G. Ledyard Stebbins, Jr. New York: Columbia Univ. Press, 1950. 643 pp. $8.00.

A German-English Dictionary for Chemists. 3rd ed. Austin M. Patterson. New York: John Wiley; London: Chapman & Hall, 1950. 541 pp. $5.00.

Methods of Mathematical Physics. 2nd ed. Harold Jeffreys and Bertha Swirles Jeffreys. New York: Cambridge Univ. Press, 1950. 708 pp. $15.00.

A Guide to Psychiatric Books with a Suggested Basic Reading List. Karl A. Menninger. New York: Grune & Stratton, 1950. 148 pp. $3.50.

The Diagnosis of Salmonella Types. F. Kauffmann. Springfield, Ill.: Charles C Thomas, 1950. 86 pp. $2.25.

Super-Regenerative Receivers. J. R. Whitehead. New York: Cambridge Univ. Press, 1950. 169 pp. $4.75.

Radioactivity and Nuclear Physics. 2nd ed. James M. Cork. New York: D. Van Nostrand, 1950. 415 pp. $5.00.

Electromagnetic Fields: Theory and Applications; Vol I: ***Mapping of Fields.*** Ernest Weber. New York: John Wiley; London: Chapman & Hall, 1950. 590 pp. $10.00.

Melting and Solidification of Fats. Alton E. Bailey. New York: Interscience, 1950. 357 pp. $7.00.

Electromagnetic Waves. 4th ed. F. W. G. White. London: Methuen; New York: John Wiley, 1950. 108 pp. $1.25.

Physical Chemistry of High Polymeric Systems. 2nd ed. H. Mark and A. V. Tobolsky. New York-London: Interscience, 1950. 506 pp. $6.50.

Analytic Geometry. Raymond D. Douglass and Samuel D. Zeldin. New York: McGraw-Hill, 1950. 216 pp. $2.75.

A Practical Survey of Chemistry. Rev. ed. Walter S. Dyer and Manfred E. Mueller. New York: Henry Holt, 1950. 564 pp. $3.60.

Physics: A Textbook for Colleges. Oscar M. Stewart. 5th ed. by Newell S. Gingrich. Boston: Ginn, 1950. 726 pp. $5.00.

Beginning Experimental Psychology. S. Howard Bartley. New York: McGraw-Hill, 1950. 483 pp. $4.00.