Geological texts by North American authors, in both Portuguese and Spanish, would do much in stimulating interest in the science itself and even more in promoting hemispheric goodwill. Why should there not be set in motion a cooperative project which would make available excellent texts in physical, historical, structural and economic geology, optical mineralogy, paleontology, etc., in a language, format, binding and price with which Latin American students are familiar?

May it be suggested that each of the various geological societies undertake the publication of a text in their respective fields? The project is herewith submitted to members of the societies with these recommendations:

1. Let an appropriate committee of the American Association for the Advancement of Science learn by inquiry of Latin American educators and geological groups what types of texts would be most welcome.

2. Let the appropriate geological society in the U. S. appoint a group of its members who are willing to donate their services and assign to each of the group chapters of the text for which they shall be responsible.

3. Let the appropriate society sponsor translation into Portuguese and Spanish and first publication of the text in a number determined by inquiry of possible demand, say, for the next three or four years.

4. Let the texts be published by one of the many reputable Latin American publishing companies.

5. Let the texts be marketed through the same or similar agencies, at a cost well within reach of the group for whose use it is intended.

6. Let each text carry an introductory page setting forth the name and nature of the sponsoring society, an invitation for closer Inter-American scientific cooperation and a list of contributing authors.

7. And finally, let action be taken now. These are fast-moving times.

HOBART E. STOCKING

WEST VIEW, PA.

COLORED TRANSPARENCIES OF TROPICAL PLANTS

THE Arctic, Desert and Tropic Information Center has recently received requests as to where colored transparencies or colored photographs of tropical plants may be secured for use or for reproduction purposes. This material has been requested for use in intensive courses of instruction being given by various Army Air Forces Training Units. It is desired to assist army personnel in the recognition of both edible and poisonous plants and fruit in the tropical areas of the present world-wide theaters of operation.

Many of the country's larger and better known museums and scientific institutions have been contacted by the Arctic, Desert and Tropic Information Center with rather discouraging results. To date no appreciable number of the desired colored transparencies have been located.

Because of the wide and select distribution of SCIENCE among American scientists, it has occurred to us that the insertion of a brief notice in this journal stating the urgent need for this materiel might bring prompt results.

ELMER W. ELLSWORTH,
Captain, Air Corps; Chief, Information Collecting and Records Section, ADTIC

CROWN-GALL BACTERIA

SCIENCE SERVICE has just published in SCIENCE, 98: 10, August 13, 1943, a note on "Plant tumor bacteria" which I should like to amend since it credits me with investigations which belong to other workers. The article was prepared from an unannotated summary of work on this subject. Science Service erroneously but innocently assumed that the results summarized were all my own. This was not the case.

The work on attenuation of crown-gall bacteria by cultivation on a medium containing glycine was done by Dr. A. J. Riker at the University of Wisconsin; that on the combined action of attenuated crown-gall bacteria and plant-growth-promoting substances was done at the Rockefeller Institute by Drs. Armin C. Braun and T. Laskaris; that on heat therapy of crown-gall disease in the Madagascar periwinkle was done by Drs. L. O. Kunkel and Armin C. Braun, also at the Rockefeller Institute. I should like to disclaim any direct connection with these investigations. Credit for them belongs to Drs. Riker, Braun, Laskaris and Kunkel, not to me.

PHILIP R. WHITE

ROCKEFELLER INSTITUTE
FOR MEDICAL RESEARCH

SCIENTIFIC BOOKS

ORGANIC CHEMISTRY

Organic Syntheses. Collective Volume 2. A Revised Edition of Annual Volumes x–xix. Edited by A. H. BLATT. ix + 654 pp. 6 × 9¼ in. Bound in dark green cloth. New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd. 1943. $6.50.

THE advent of this new collective volume, describing

the preparation of nearly 300 typical organic compounds, will be warmly welcomed by all organic chemists who, with the second edition of Collective Vol. 1, will now have in two compact volumes all the material contained in the first 19 annual volumes of Organic Syntheses, revised and brought up to date, with tables of contents and thumb indexes covering Type of Reaction Index, Type of Compound Index, Formula Index, Illustration Index and General Index. In its preparation, the editor had the assistance of an editorial board of 18 recognized leaders in the field. In the main, it follows the general plan of Collective Volume 1.

In reviewing and revising the subject-matter of annual volumes x–xix, errors have been corrected, calculations, references and the spelling of names (particularly foreign ones) have been verified, modifications and improvements in procedure have been incorporated in the text, and 11 new and checked methods have been added.

As heretofore, the text covering every compound is divided into (1) Procedure, (2) Notes and (3) Methods of Preparation. The last includes all methods of preparative value recorded in *C. A.* up to the end of Vol. 35 (1941), and in some cases still later. A helpful feature is the inclusion in parentheses, under the name of the compound, of the *C. A.* indexing name, where that differs from the title given. Compounds whose preparation is described, but which can be purchased in the open market for $5 or less per kilogram, are marked with an asterisk.

Organic chemists can show their appreciation of the service rendered by the editor and his board in compiling this most useful volume, by forwarding (in duplicate) constructive suggestions for future volumes and calling attention to any errors of omission or commission.

In the judgment of the reviewer, this collective volume, like its predecessor, should be on the shelves of every well-equipped laboratory of synthetic organic chemistry.

Introduction to Organic and Biological Chemistry. By L. EARLE ARNOW, Ph.D., M.D. and HENRY C. REITZ, Ph.D. $6 \times 8\frac{3}{4}$ in. 736 pp. Illustrated. Bound in dark blue cloth. St. Louis: The C. V. Mosby Co. 1943. $4.25.

As the authors point out, there are many excellent elementary text-books in organic as well as in biochemistry, but no single volume presenting the fundamentals of both fields concisely and coherently. This gap they have endeavored to fill, and the result is a text-book which should be both stimulating and helpful to all interested in the closer correlation of chemistry with the medical and biological sciences, particularly students in premedical, predental, agriculture, nutrition and dietetics, home economics, physical education and similar courses.

Like all Gaul, the book is divided into three parts. Part I (pp. 21–53) covers "Chemical Fundamentals in Review," its two chapters being devoted to "Chemical Facts and Theories" and "Particles in Solution." It is the authors' thought that this will serve mainly as a background to which the student can be referred whenever he exhibits signs of forgetting these fundamentals.

Part II (pp. 54–535) is devoted to "Organic Chemistry" and occupies nearly three fourths of the total book. The classification of its subject-matter follows conventional lines in the main, and is introduced by several pages of useful suggestions as to how to study "Organic Chemistry" most successfully. Another commendable feature of this part is the clothing of the dry bones of chemical facts and reactions with the flesh and blood of human interest and of the progress of civilization and industry.

Part III (pp. 536–694) deals with "Biological Chemistry," and is a summary of the more important phases of metabolism and nutrition, presented more from a chemical than from a physiological or anatomical point of view. An excellent "Summary of Nutritional Requirements" is included.

All the chapters conclude with a series of study questions; and nearly all of them with a list of references to books, monographs, reviews, etc., wherein the student will find additional information.

The Appendix, which contains the "1941 International Atomic Weights" and 16 pages of tables giving the "Composition and Calorific Value of Foods," is followed by an author index and a subject index. The 91 illustrations throughout the text add much to its attractiveness. Paper, type, printing and binding are excellent, and the book fulfills well the purpose for which it was written. The dedication to the late Ross Aiken Gortner touches the heart of the reviewer also, for Gortner was one of his "boys" of whom he was most proud.

Organic Syntheses. Vol. 23. An annual publication of satisfactory methods for the preparation of organic chemicals. LEE IRVIN SMITH, editor-in-chief, with an editorial board and an advisory board. Pp. 124. New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd. 1943. $1.75.

THIS new volume of a well-known, excellent and useful series in general follows closely the plan of its predecessors. New preparations described are the following: Acetylbenzoyl, Alloxan, Alloxantin Dihy-

drate, Bromoacetal, 3-Bromo-4-Hydroxytoluene, Carbobenzoxy Chloride and Derivatives, 1,1-Cyclobutanedicarboxylic Acid and Cyclobutanecarboxylic Acid, Cyclopropyl Cyanide, *beta*-Di-*n*-Butylaminoethylamine, 2,3-Dihydropyrane, *beta,beta*-Dimethylacrylic Acid, *beta*-Dimethylaminopropiophenone Hydrochloride, *beta*-Ethoxyethyl Bromide, *beta*-Ethoxypropionitrile, Ethyl Benzoylacetate, Ethyl Bromoacetate, Indole, Ketene Diethylacetal, Mandelic Acid, *l*-Menthoxyacetic Acid, l-Menthoxyacetyl Chloride, Mesitaldehyde, *beta*-Methylglutaric Acid, *beta*-Naphthaldehyde, *p*-Nitrobenzoyl Peroxide, Pentamethylene Bromide, *alpha*-Phenylethylamine, *beta*-Phenylethylamine, Phthalaldehydic Acid, Pseudoionone, 1(*alpha*-Pyridyl)-2-Propanol, *trans*-Stilbene, Tetrahydrofurfuryl Bromide, Tetrahydropyrane, Tetraphenylcyclopentadienone, Tetraphenylphthalic Anhydride, Tribiphenylcarbinol, Triphenylcarbinol, Triphenylchloromethane.

The subject index at the close is cumulative in the sense that it covers the contents of Volumes 20, 21, 22 and 23. The cumulative indexes for previous volumes in the series will be found in Collective Volumes 1 and 2. The series is so well established as the leader in its chosen field that no eulogy is necessary on the part of the reviewer.

MARSTON T. BOGERT
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THE MOTHS OF SOUTH AFRICA

The Moths of South Africa. By A. J. T. JANSE. Vol. IV. Part I. (Published by the University of Pretoria, South Africa.)

WHEN my wife and I visited Pretoria in 1931, we called on Dr. Janse, and saw his wonderful collection of moths and his great and completely indexed library of works on Lepidoptera. We discussed the forthcoming revision of "The Moths of South Africa," and since that time the volumes have been coming out at long intervals, under circumstances of increasing difficulty. The present part contains a list of the subscribers, but of these, several are in enemy countries, and others are likely to have dropped out. The principal support has come from the National Research Council of the Union of South Africa, and we note that General Smuts has made a generous subscription.

The part just received (dated November, 1942) is of unusual interest because it deals with the most primitive Lepidoptera known, the Hepialids and the Micropterygids. The former are numerously represented in South Africa, with only one species, *Leto venus,* of large size and comparable with the large Australian forms. The genus *Leto* has also one species in New South Wales and one in the Fiji Islands, a distribution suggestive of great antiquity and approaching extinction. It is interesting to note that *Leto venus* has only been found at Knysna, the locality on the coast of South Africa noted for its relict fauna. The Micropterygids appeared to be absent from South Africa until in 1917 Janse took a single female specimen of a new genus and species at Karkloof, Natal. In 1930 he returned to the same spot and took a male, and these two alone represent the known South African Micropterygid fauna.

In the classification of moths, it has always been usual to place the Micropterygids at the bottom of the scale, as nearest to the caddis-flies, from which the Lepidoptera are supposed to have been derived. But Janse now classes the Hepialids as most primitive on various grounds, but thinks they originated quite apart from the Micropterygids, the Lepidoptera being thus diphyletic.

The book is illustrated by eleven plates of Janse's exquisite drawings of structures and five photographic plates of moths. It is dedicated to the memory of Edward Meyrick of England, who described more Microlepidoptera than any one else and a bibliography of Meyrick's publications is included.

T. D. A. COCKERELL

SPECIAL ARTICLES

ON THE TYPE OF CHOLINESTERASE PRESENT IN BRAIN TISSUE[1]

TWO esterases capable of hydrolyzing acetylcholine have been shown[2] to exist in the animal body: a true cholinesterase, acting exclusively on certain choline esters, and a non-specific enzyme hydrolyzing not only esters of choline but a variety of non-choline esters as well. The true cholinesterase exhibits its maximum activity at low concentrations of acetylcholine (around 3 mg per cent.) and displays increasing inhibition with rising substrate concentrations, whereas the non-specific enzyme exhibits its greatest activity at high concentrations of acetylcholine (above 300 mg per cent.) and displays decreasing activity with diminishing concentrations of this substrate. Since the physiological function of the non-specific enzyme is as yet unknown it has been provisionally named pseudo-cholinesterase.

In view of the differences in activity of the two enzymes at high and low concentrations of acetylcholine, measurements at these two substrate concentrations can serve to indicate whether true cholinesterase

[1] A preliminary report on this investigation, which was aided by a grant from the Banting Research Foundation, was presented before the Toronto Physiological Society on December 2, 1942.

[2] B. Mendel and H. Rudney, *Biochem. Jour.,* 37: 59, 1943.