

brought out to which alkaloid some of them refer. On page 1065, Fig. 1 represents cinchonine; page 1067, Fig. 4, the stable form of quinine; and page 1068, Fig. 5, the unstable form of the same alkaloid. On page 1070, Table II, heading of 6th column, for quinine read quinidine; and in the same table, under refractive indices, for α - γ read γ - α .

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NEW BOOKS.

Chemical Pathology. By H. GIDEON WELLS, PH.D., M.D., Professor of Pathology in the University of Chicago, and in the Rush Medical College, Chicago. Third Edition, Revised and Reset. Octavo, 707 pages. Philadelphia and London. W. B. Saunders Company, 1918. Cloth, \$4.25 net.

The importance of the recent advances in biological chemistry in its varied relations to pathology are evidenced by the necessity for a revision of Professor Wells' standard book on Chemical Pathology within 4 years after the appearance of the previous edition. New matter and careful revision of the old have added 68 pages to the text. Most notable of the new material added to the book are the sections on the Abderhalden Reaction, atrophy, pressor bases, and the chemical basis of growth. The addition of this last section dealing with the so-called "Vitamines" and their relation to growth and the deficiency diseases furnished material the lack of which in previous editions has seemed unfortunate to many. In view, however, of the increasing interest in and importance of the nutritional diseases, beri-beri, pellagra, scurvy, and the like, it would appear that they merit more than the passing mention accorded them in the section on growth. This, however, may be the point of view of a biochemist and student of nutrition. The changes in view-point as a result of the application of the newer methods of micro-analysis of blood and tissues are well illustrated by the discussions of uric acid and gout. As in the previous edition, the excellent chapter on diabetes by Dr. Woodyatt is of unusual interest. The full bibliographical references are a feature of great value to investigator and general reader alike.

H. B. LEWIS.

Sir William Ramsay. By Tarini Charan Chaudhuri, M.A., Professor of Chemistry, Edward College, Pabna; with the introduction by Panchanan Neogi, M.A., Ph.D., Professor of Chemistry, Government College, Rajshahi. Butterworth and Company. India. 1918.

This little book of 66 pages from far-off India tells in very fascinating manner the story of the life and triumphs of the great Nobel prize-winner, Ramsay, whose work has done so much to advance modern chemistry. Professor Neogi in his introduction, says that ordinary text-books give

the results of individual workers without indicating how and when these results were achieved. The value of the how and when and why to the student of chemistry is greater than the facts acquired. The present volume contains chapters on Ramsay's education and career, on his researches in organic and physio-organic chemistry, on his discoveries in physical and inorganic chemistry, in radio-activity, electrons and elements and on the transmutation of elements, ending with a list of Ramsay's original papers—over one hundred and twenty five.

The whole makes very interesting reading, as the wonderful story is told in simple language, withal gracefully and devotedly.

From the publisher's point of view, it is unfortunate that this gem should be presented in so inelegant a dress. The frontispiece is a portrait of Ramsay in his declining days. The more familiar portrait, taken in his prime, as we knew him when he came to this country from the Canadian meeting of the British Association, would be a welcome insert for future editions.

ARTHUR JOHN HOPKINS.

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Elements of General Science. Revised Edition. By O. W. CALDWELL, Columbia University and W. L. EIKENBERRY, University of Kansas. XII + 400 pages. Frontispiece and 180 figures. Ginn & Co. Price, \$1.28.

The first paragraph of the preface gives the view-point of the authors: "Science instruction in the first year of the high school has presented one of the most serious problems in secondary-school work. The results of modern science are extensively used in almost all kinds of human experience, and the scientist's way of working is recognized as the most reliable method. It is also generally recognized that education by the use of science should lead to better understanding and better use of the types of scientific knowledge which relate to common experience. It is therefore the object of this course to develop a usable fund of knowledge about common things and helpful and trustworthy habits of considering common experiences in the field of science. It is expected that pupils' interests and abilities will be discovered and utilized in such ways that more effective and more profitable work may be done in the vocations or in later studies."

The text consists of 6 parts; and perhaps no better idea of the scope of the work can be attained in brief than by giving the chapter contents which follow:

Part 1. The Air.—1. Interesting Things about Air. 2. Air and Water. 3. Air Temperatures and the Seasons. 4. The Weather. 5. Structure of the Air—Molecular Theory. 6. Composition of the Air—Atomic Theory. 7. Relation of the Air to Food Manufacture. 8. Dusts, Molds, and Bacteria of the Air. 9. Distribution of Bacteria and Other Disease Germs.

Part II. Water and Its Uses.—10. Ice, Water, and Steam. 11. Mechanical Uses of Water and Air. 12. Climatic Influences of Bodies of Water. 13. Water and Commerce. 14. Water Supply and Sewage Disposal.

Part III. Work, Energy and Electricity.—15. Common Types of Work. 16. Mechanical Energy and Heat. 17. Heat and Light from Electric Currents. 18. Chemical Effects of Electric Currents. 19. The Magnetic Effects of Electric Currents.

Part IV. The Earth in Relation to Other Astronomical Bodies.—20. The Moon, Planets and Comets. 21. The Sun and Other Stars.

Part V. The Earth's Crust. 22. How Rocks Become Soil. 23. Structure and Fertility of Soil. 24. Soil, Water, Drainage and Irrigation. 25. Erosion and Sedimentation. 26. Life in the Soil.

Part VI. Life upon the Earth.—27. The Plant Covering of the Earth. 28. How Food Is Used by Plants. 29. The Utilization of Food in Animals. 30. Hygienic Aspects of Nutrition. 31. Reproduction in Plants and Animals. 32. The Struggle for Existence. 33. Parent and Offspring.

The chapters are *introduced* by numerous questions for discussion, thus stimulating interest in the content of the chapter itself. Most of the apparatus can be made and the pieces that must be bought are few and not too expensive. "The apparatus for use in the experiments should be the most simple available, and that from the community or home may often be more educative than complex and costly apparatus." The maps, plans and diagrams, many of them new, illustrate everything from an eleven-year-old boy's experiment to show that air occupies space to the Ford car and a photograph of the planet Jupiter. As a whole, the book is attractive and would be interesting reading to many adults. It is entirely too big for Illinois schools as, owing to legislative action years ago, half of the first year in high school must be devoted to a study of the effects of stimulants and narcotics along with a "review of physiology and hygiene."

There is a manual of experiments to accompany the text which contains much illustrative material. It would be better for the pupil and the teacher if it were put up in a "loose-leaf" form. Taken together, text and the manual, they constitute what is, perhaps, the best material for the work intended yet published. The proper use of them should leave the student with a good taste in his mouth for more science when he gets a chance for it under the title of "Biology," "Physics," "Chemistry," etc.

Binding and press-work in both books are excellent. C. M. WIRICK.