ondary magmas, perhaps fluxed by CO_2 released by reactions of granitic or syenitic juices on limestone. Most of the nepheline pegmatites appear to be replacements to more or less degree.

The visible granite is definitely post-nepheline in age, but apparently has caused a large amount of albitization. Quartz-bearing dike rocks cut the nepheline rocks.

The authors contend that the limestone-syntexis theory is at fault mainly in mechanics; however, the chemical reactions embodied may apply under the present theory. The exact composition of the sediments prior to nephelinization is not understood, but they appear to have been impure limey rocks. Calcite is present in all the rocks examined and is perhaps least in those richest in nepheline. The solutions causing the alteration may have been normal granitic or syenitic liquors rich in Na_2SiO_3, and probably contained Al_2O_3 and Fe_2O_3. The source of the solutions is also indeterminate; they may have come from an earlier unexposed granitic or syenitic body, or may have been related to the visible intrusions that manifested themselves at first merely by exhalations, and later by actual near-surface intrusion and caused the albitization of the rocks formed by their first action.

Comparison is made of the Bancroft area with other areas in the major belt of alkaline rocks and serves only to strengthen the thesis of origin.

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SCIENTIFIC BOOKS

PETROLEUM REFINING

Chemical Refining of Petroleum. By VLADIMER A. KALICHEVSKY and BERT ALLEN STAGNER. Revised edition. 550 pp. New York: Reinhold Publishing Corporation. 1942. $7.50.

THIS is a thorough revision of the authors' valuable text and reference book, the first edition of which appeared in 1933. In the revised edition the text material has been expanded from 352 to 416 pages, the supplementary list of U. S. patents on petroleum refining occupies 79 pages and includes only patents not discussed in the text and not listed in the first edition, in which the list of patents on the subject covered only 25 pages and included foreign patents. In the revision no material change has been made in the conversion and other tables given in the first edition, but a 12-page glossary of terms has been omitted from the revised edition. The indices include an index of patent numbers and an author's index, as well as the subject index which covers both the text and the supplementary list of patents.

While there have been only a few changes in the general arrangement of the text, it has been almost completely rewritten and much new material introduced. Chapter I, on the composition of petroleum, discusses the classes of compounds and the principal products. A brief section on analysis of petroleum hydrocarbons mentions the use of new chemico-physical methods and refers to recent researches which fix the composition in terms of the characteristic radicals rather than by attempting to isolate individual compounds. This is followed by a long chapter (75 pages) on treatment with sulfuric acid, containing new material on polymerization of unsaturated compounds, cold acid treatment of cracked naphthas, low temperature treatment and octane rating, and distillation after treatment. Other sections of this Chapter II have been rewritten and somewhat enlarged. At the end is a bibliography of 265 references on acid treatment. These bibliographies at the end of each chapter constitute a favorable feature of the book.

Chapter III discusses acid sludge and its disposal, recovery and concentration of sulfuric acid; and contains a new section on removal of hydrogen sulfide from cracked gases and its use in manufacture of sulfuric acid. In Chapter IV, on treatment with alkaline reagents, new material, particularly on the extraction of mercaptans, has been introduced. Both of these chapters have been largely rewritten.

Chapter V covers sweetening operations and elimination of elemental sulfur, which made up Chapter IV of the first edition, as well as the reduction of total sulfur in light distillates, which was the subject-matter of Chapter VII in the previous edition. As an introduction to these subjects the laboratory analysis of oils for various sulfur compounds, and tests for corrosiveness in oil are discussed in some detail. In the discussion of sweetening operations the oxidation of mercaptans by elemental sulfur, by oxygen or air, and by alkali hypochlorite is followed by new material on the extraction of mercaptans. The sodium plumbite ("doctor solution") treatment has been well elucidated; consideration of recent researches on the subject and of sweetening before acid treatment or before distillation is included. Sweetening by means of lead sulfide, other sulfides, copper salts and hypochlorite have shown little development and the text therefore follows largely the material given in the first edition. New sections on extraction of mercaptans by increasing the solvent power of caustic alkali solutions and

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by treatment with alcoholic solutions of alkalies and alkali metals include discussions of the solutizer and methanol extraction processes and reflect new developments in this field. In the section on reduction of total sulfur in light distillates, new material consists of the catalytic desulfurization (Houdry) process and the perco process. Other processes are briefly given and it is stated: "as yet the only method that has come into extensive use for desulfurizing gasoline, straight-run or cracked, is that of strong sulfuric acid under carefully controlled conditions, as described in Chapter II."

Chapter VI expounds refining by absorption; it has been largely rearranged and much improved. The following divisions have been rearranged and enlarged: Classification, methods of preparation, chemical and physical properties and methods of testing absorbents; refining by percolation, contact filtration and regeneration of absorbents. Contact decolorization and refining of both light and heavy oils has been clarified by rearrangement; vapor phase refining with absorbents has been much enlarged and classified under the Gray process and the Houdry catalytic process. New material in this chapter includes: A section on color of petroleum oils with discussion of methods and references on relations between color scales; table showing effect on color of temperature and time of contact with different clays; and a new section on filtrol fractionation.

Chapter VII, in spite of the rapid development in refining by solvents, is shorter than the corresponding chapter in the first edition. This exception is well justified, the explanation being the appearance in the meantime of an excellent book ("Modern Methods of Refining Lubricating Oils," by V. A. Kalichevsky, New York, 1938, Reinhold Publishing Co.), which is devoted mainly to solvent refining and to which reference is made for details of the subject. This enables the authors to make a summary of the subject in Chapter VII, and as such it is the best which has come to the reviewer's attention.

Completing the second edition are four short chapters on detonation and antidetonants; inhibitors of atmospheric oxidation of petroleum products, antioxygens; gums in cracked petroleum products; and finally deterioration of lubricating and similar oils, addition agents. These are well written, authoritative and bring the treatment of the subjects up-to-date.

JEROME J. MORGAN

ORGANIC CHEMISTRY

Organic Chemistry. An Advanced Treatise. By HENRY GILMAN, editor-in-chief. Editorial board: Roger Adams, Homer Adkins, Hans T. Clarke, Carl S. Marvel and Frank C. Whitmore. Second edition. Vol. I, pp. 1–1077; Vol. II, pp. 1079–1983. New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Limited. 1943. 6¼ × 9¼ in. Bound in green buckram. $7.50 per vol.

FEW recent treatises on chemistry by American authors have received, both here and in other countries, such a universal and enthusiastic welcome and commendation as the first edition of this work. From the date of its publication in 1938, it has been regarded as an outstanding and authoritative contribution to the literature of its subject. This new edition, therefore, which brings many of the chapters in the previous one up to date, and introduces some new ones, is assured of a most cordial reception by all organic chemists.

Chapters in the older edition which do not appear in the new one are: Open-chain nitrogen compounds; The chemistry of pyrimidines, purines and nucleic acids; Carotenoids: The polyene pigments of plants and animals; and Rotatory dispersion. On the other hand, the edition under review contains the following new chapters: The reactions of aliphatic hydrocarbons (Egloff), Synthetic polymers (Marvel and Horning), Catalytic hydrogenation and hydrogenolysis (Adkins and Shriner), Organic sulfur compounds (Connor), Aliphatic fluorides (Henne), The chemistry of the porphyrins (Corwin), Chlorophyll (Steele) and The redistribution reaction (Calingaert).

In addition to members of the editorial board, twenty-five other distinguished chemists make up the list of contributors. The books are indispensable to the organic chemist who wishes to keep in the forefront of his profession.

In purpose, plan, scope and format, the new edition resembles the old, except that the color of the binding is green instead of maroon. The work of the printers and publishers is excellent in every respect.

MARSTON TAYLOR BOGERT

CARDIOLOGY

A Short History of Cardiology. By JAMES B. HERRICK, M.D., emeritus professor of medicine, Rush Medical College, consulting physician to Presbyterian Hospital, Chicago. 258 pp. Springfield, Ill., and Baltimore, Md.: Charles C Thomas. 1942.

IT is appropriate that Dr. James B. Herrick, the dean of American cardiologists, should have chosen to record a history of his beloved subject. The ever-increasing publication of articles and books in America dealing with the history of medicine is eloquent testimony that the culture of American medicine is reaching its adult stage.

This short history of cardiology is well written and its interesting narrative style and logical sequences maintain the reader's constant attention and interest.