

It is assuredly the wish of all who are conversant with the history of this honored institution, and especially of those who have received instruction within its walls, that it shall continue to maintain the best traditions of the past while seeking to extend its sphere of influence for the diffusion of useful knowledge. In accordance with this desire the hope may be entertained for a constantly increasing measure of prosperity and success.

The completion of such a laborious task as the compilation of this historical record has involved is an occasion when congratulations may justly be extended to all those concerned in its production, and particularly to its editor. It is gratifying to note its typographical excellence and the clearness with which the numerous illustrations have been produced, while the very complete index will greatly facilitate reference to its contents.

F. B. POWER.

The Theory of Emulsions and Emulsification.
By William Clayton, D.Sc., F.I.C.; foreword by Professor F. G. Donnan, C.B.E., M.D., Ph.D., D.Sc., F.R.S. P. Blakiston's Son & Co., Philadelphia, 1923.

For anyone who is interested in the subject of emulsions in a general way, this volume is a most compact and comprehensive work because not only does it contain all the information which has been gathered on the subject but the various phases of the subject have been separated from the mass of related matter which one usually finds in textbooks on Colloid Chemistry.

To those who contemplate doing research work on the subject of emulsions, this little book is invaluable as every bit of research which has been done toward the development of an adequate and complete theory of emulsions is discussed therein and complete references are given in every case to the original work published.

The text of the book gives in a very clear and concise fashion the various theories of emulsions and emulsification which have been advanced and which for one reason or another have been found unsound or insufficient, and finally leads up to the modern absorption film theory which seems to be broad enough to embrace and explain the results which have been obtained in working with all classes of emulsifiers, in both the oil-in-water-type and water-in-oil-type of emulsions.

The author then devotes a chapter on the laboratory methods of physical measurement

of emulsions and then discusses the few known factors which influence the process of emulsification.

The final chapter deals with de-emulsification which has had very important technical application in the breaking up of oil-field and condenser water emulsions.

In the back of the book is given a complete bibliography of the papers which have been written on emulsions to date and these are arranged in chronological sequence so that, whether interested in the physical and mathematical aspects or the physiological, pharmaceutical and other practical phases, one can find all the published work in his own special field in the order in which it was developed.

One cannot help but feel in reading this book that only the surface has been scratched of this important branch of Colloid Chemistry; that tremendous theoretical interest and practical possibilities lie in the study of emulsions, since the ordinary things about us such as milk, butter, soaps, medicinal emulsions and innumerable others are all items in the field of emulsions, each of which is a special and intricate study in itself. The possibilities in research work in the field of pharmaceutical emulsions are especially bright, as to-day the whole subject is founded on an empiric basis. To the pharmaceutical chemist as well as to specialists in other technical fields, and to students, this book is strongly recommended for the concise manner in which the subject is presented.

LEO ROON.

Catalysis with Special Reference to the New Theories of Chemical Action. A General Discussion. Reprinted from the Transactions of the Faraday Society, Vol. XVII, Part 3, May 1922. The Faraday Society, London.

At the meeting of the Faraday Society held on September 18, 1921, in the Hall of the Institution of Electrical Engineers, Victoria Embankment, London, a general discussion took place on "Catalysis with Special Reference to Newer Theories of Chemical Action." The symposium was divided into two parts. The afternoon session was devoted to "The Radiation Theory of Chemical Action" and consisted of the following papers: "Radiation and Chemistry," by Prof. Jean Perrin of the Sorbonne, Paris; "The Radiation Hypothesis of Chemical Reactivity and Some of Its Applications," by Dr. W. C. McC. Lewis, Brunner professor of physical chemistry in the University of Liverpool; "The Theory of Chemical Reaction and Reactivity," by Prof.

E. C. C. Baly, F.R.S.; and "Is a True Monomolecular Action Possible?" by Prof. T. Martin Lowry, D.Sc. The following noted authorities took part in the discussion of these papers: Prof. F. A. Lindemann, Prof. Svante Arrhenius, Dr. Irving Langmuir, Dr. N. R. Dhar, Prof. J. Perrin and Prof. W. C. McC. Lewis.

The evening session was devoted to "Heterogeneous Reactions" and consisted of the following papers: "Chemical Reactions on Surfaces," by Dr. Irving Langmuir of the Research Laboratory of the General Electric Co., Schenectady, N. Y., and "The Mechanism of the Catalytic Action of Platinum," by the same author. In the discussion on this subject the following noted authorities took part: Dr. Eric Rideal, Prof. Wm. A. Bone, Dr. G. Ingle-Finch, Prof. E. C. C. Baly, Prof. W. C. McC. Lewis, Prof. Edwin Edser, Dr. E. F. Armstrong, Dr. T. P. Hilditch, Dr. H. E. Holtorp and Dr. Irving Langmuir.

A remarkable and historical meeting in which not only scientists of Great Britain but of three foreign countries took part; namely, Prof. Arrhenius of Sweden, Prof. Perrin of France, and Dr. Langmuir of the United States. Every one interested in this subject should not fail to read this book.

OTTO RAUBENHEIMER, PH.M.

Isotopes. By F. W. Aston, M.A., D.Sc., A.I.C., F.R.S., Fellow of Trinity College, Cambridge. Octavo, 152 pp., 21 figs., 4 plates. Cloth, \$3.00. Edward Arnold & Co., London, and Longmans, Green & Co., N. Y. City, 1922.

Toward the end of the last century the attitude of science in relation to the atomic theory started to undergo a complete and radical change. What had been before regarded as a convenient working hypothesis became with remarkable rapidity a definite statement of fact. The causes of this remarkable advance are to be ascribed in particular to the discovery of radioactivity.

Dalton in his Atomic Theory in 1803, the foundation of the modern chemistry, laid down five postulates, the validity of only one is in question, *i. e.*, "Atoms of the same element are similar to one another and equal in weight." The chemist who above all others urged the possibility of the heterogeneity of atoms was the late Sir William Crookes. His address to the Chemical Section of the British Association at Birmingham in 1886 should be read by all those interested in the history of scientific thought. The result obtained from the radioaction elements introduced a wealth of new

and revolutionary ideas. One of these was that elements might exist which were chemically identical but yet different in radioactive properties and even in atomic weight. In 1913, again in Birmingham, 27 years after Crookes made his prophetic remarks about atomic weights, papers were read in different sections of the British Association, one on the Radioelements and the Periodic Law, the other on the Homogeneity of Neon, both of which proved that substances could exist with identical, or practically identical, chemical and spectroscopic properties but different atomic weights. The need for a specific name for such substances soon became imperative and Soddy suggested the word "Isotopes" from the Greek "isos" equal, and "topos" place, because they occupied the same place in the periodic table of the elements.

The author has made wonderful researches in this new chemistry, which are laid down in the present monograph, which is well and abundantly illustrated with plates and figures. The book affords a ready means of becoming familiar with one of the most important developments in chemistry since the time of Dalton, namely, the subject of "Isotopes." Surely chemists and also pharmacists should be somewhat acquainted with this subject!

OTTO RAUBENHEIMER, PH.M.

THE SYNONYMY OF PEPPERMINT AND ITS PARENTS.

Conference Bulletin No. 2.

Since the first bulletin* was issued, additional material has been promised for these researches. Prof. Asahina of Tokyo University has secured authentic Japanese peppermint plants, for which the U. S. Dept. of Agriculture has granted an importation license. Mr. Norbert Miller, of Todd & Co., who recently visited Madison to discuss various phases of the research, has promised to supplement an earlier shipment by a much larger quantity of the first runnings of peppermint oil.

Dr. E. W. Washburn, of the National Research Council, was another recent visitor. We feel that a closer and more helpful relationship with the Council has been established.

At the Research Conference of October 13th, Mr. F. J. Bacon, who holds the A. M. Todd Fellowship, reported the preliminary results of his studies on the synonymy of peppermint and its parents.

* See page 1080, December 1922.