

A permanent solution of the problem on these lines may be postponed by the fact that, notwithstanding their well-known economic importance, the Phytoptidæ remain a little-known group, even from the systematic standpoint, doubtless owing to their excessively small size. But if the present hypothesis should prove to have any basis in fact, it will probably be possible to control or even to exterminate the yellows by the local destruction of the wild relatives of the peach which may be found to harbor the offending creatures. The extent to which this would be necessary for the protection of peach-orchards will depend upon the agency of transmission. Fortunately the mites are without wings, and whether carried by small birds or by insects, the distances whence they would ordinarily be brought are not great. There is thus opened another possibility, at least, of the relief of this important industry from the ravages of maladies which not only cause thousands of dollars of damage annually, but which are chargeable with a further public injury in limiting the production and popular enjoyment of this finest of temperate fruits.

O. F. COOK.

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#### SCIENTIFIC BOOKS.

*Leçons de chimie physique.* Professées à l'Université de Berlin. Par J. H. VAN'T HOFF, membre de l'Académie des Sciences de Berlin. Professeur ordinaire à l'Université, et directeur de l'Institut de Physique de Charlottenbourg. Ouvrage traduit de l'allemand par M. COEUVISY, Professeur agrégé au Lycée de Saint-Omer. Paris, Librairie Scientifique, A. Hermann. 1899.

The book in hand is a French translation of Van't Hoff's lectures on 'Selected Chapters in Physical Chemistry' which he now delivers at the University of Berlin. As the title implies, the book is not a systematic treatise on the whole subject of physical chemistry, but the

number and importance of the subjects dealt with are so great that the scope of the work is not small.

The order of arrangement is quite different from that usually adopted. It is the general custom to take up first the older work in physical chemistry which has to do with the relations between composition and physical properties, and constitution and physical properties. This is then followed by the newer physical chemistry, dealing with solutions and energy transformations in the broad sense; concluding with chapters on chemical dynamics and chemical statics.

Van't Hoff has, indeed, exactly reversed this order. Part first is on Chemical Dynamics, including chemical equilibrium and reaction velocity. Part second, on Chemical Statics, contains chapters on molecular weights, molecular structure and molecular grouping; and it is not until the third and last part of the book is reached that we find a discussion of the relations between properties and composition; comprising relations between physical properties and composition on the one hand, and chemical properties and composition on the other.

In those who have been accustomed to the older order of things this new order of presentation produces a little discord. This, however, may not argue against the method adopted by Van't Hoff. It should, nevertheless, be noted in this connection that the more generally accepted order of presentation is far more closely in accord with the historical development of the subject, and there are those who believe in the pedagogical value, at least, of the historical method.

The newest work of Van't Hoff, like everything which he has written, is full of original and brilliant suggestions. There is hardly a subject touched, in the whole book, without new light being thrown upon it and new relations pointed out. No one can read the work without feeling that physical chemistry is here treated by a master hand, which not so much compiles as creates.

These lectures are, for the most part, rather advanced, as we should naturally expect them to be. They should, therefore, not be placed

in the hands of a beginner. To any one who has mastered the elements of physical chemistry this book is indispensable, and it should be read by all who desire to keep abreast with the newest and best which has appeared in the field of general chemistry.

H. C. J.

*Determination of Radicles in Carbon Compounds.*

By DR. H. MEYER, Docent and Adjunct of the Imperial and Royal German University, Prague. Authorized translation by J. BISHOP TINGLE, Ph.D., F.C.S., Instructor of Chemistry at the Lewis Institute, Chicago, Ill. New York, John Wiley & Sons; London, Chapman and Hall. 1899.

This English edition of Dr. H. Meyer's 'Anleitung zur quantitativen Bestimmung der organischen Atomgruppen' will be heartily welcomed by all teachers and advanced students in organic chemistry. As the translator well says in his preface: 'The quantitative side of organic chemistry, apart from elementary analysis, is almost always neglected in the ordinary courses of instruction, and when the need for it arises, in the prosecution of research work, for instance, it is difficult to obtain a comprehensive view of the methods which are available without undue expenditure of time.' The present work supplies a systematic treatment of the various methods in use for determining quantitatively most of the groups ordinarily found in carbon compounds in a very convenient and compact form. It is to be hoped that it will bring about the introduction of some quantitative work into the regular college course of organic preparations. Some idea of the character of the book may be given by the following brief synopsis of its contents. The book is divided into five chapters. Chapter I., which is introductory, treats of the determination of hydroxyl ( $-\text{OH}$ ); Chapter II. of methoxyl ( $\text{CH}_3\text{O}-$ ), ethoxyl ( $\text{C}_2\text{H}_5\text{O}-$ ), and carboxyl ( $-\text{COOH}$ ); Chapter III. of carbonyl; Chapter IV. of the amino and related groups and Chapter V. of the diazo-, hydrazide-, nitro-, iodoso- and iodoxy-, and the peroxide-groups. The author has made various corrections and additions to the English edition, so that it is an improvement on the German one. The book

is well printed and bound in convenient form for laboratory use. It has a good index of both subjects and authors' names, and an appendix containing some useful tables. The book can be most heartily recommended to all organic chemists.

W. R. ORNDORFF.

SCIENTIFIC JOURNALS AND ARTICLES.

IN *The American Journal of Physiology* for November, J. C. Herrick reports an investigation of the influence of temperature on nervous conductivity. He found that a strong or moderate action current produced by an induction current or condenser discharge was not changed in intensity when the nerve impulse passed through areas varying in temperature from  $8^\circ\text{C}$ . to  $40^\circ\text{C}$ . Usually a decrease in current followed the application of temperature beyond these limits. An increase in the strength of action current in passing the impulse through a warmer area occurs, however, under two conditions—when the action current is only a small fraction of the maximum, and when the entire nerve except the warmed part is below  $10^\circ\text{C}$ . From his observations he concludes that the action current ordinarily observed and studied probably lies far beyond those accompanying maximal functional impulses.

Porter and Muhlberg present an experimental criticism of the theory that injury produces prolonged inhibition of the activities of the spinal cord. Believers in automatism of the cord have explained the failure of the cord to continue orderly functioning after separation from the brain, by assuming that the conditions of experimentation inhibit the spinal centers for a long period. To settle the question, the cell bodies of the respiratory nerve of the diaphragm were separated on one side of the spinal cord from the respiratory center in the brain. After this was done, these cells were still able to discharge motor impulses, but their apparently automatic rhythmic respiratory power was gone. Animals kept for a long period after this operation proved that the loss was permanent, and that it could not, therefore, be ascribed to inhibition.

Artificial division of egg cells, now attracting so much attention, has been further investi-