

monia, any decrease in dissociation due to the alcohol would be the same for both.

The results are given in the table. The figures for litmus are on the assumption that it is an acid.

| Indicator. | Per cent. dissociation. | | Decrease. |
|----------------------------|-------------------------|------------------------------------|-----------|
| | Before adding alcohol. | After adding 13 per cent. alcohol. | |
| Phenolphthalein..... | 67 | 30 | 37 |
| Litmus..... | 76 | 80 | ---4 |
| “..... | 42 | 45 | ---3 |
| <i>p</i> -Nitrophenol..... | 80 | 81 | ---1 |
| “..... | 12 | 16 | ---4 |
| Rosolic acid..... | 57 | 57 | 0 |

It will be seen that phenolphthalein is alone in its behavior with alcohol, the latter even producing a slight *increase* in dissociation with litmus and *p*-nitro phenol. It would seem, therefore, that the decrease in the dissociation of the ammonia plays but a very small part in the decolorization of phenolphthalein by alcohol, and that the “color demonstration” depends upon something quite different from that which its authors state.¹

JOEL H. HILDEBRAND.

UNIVERSITY OF PENNSYLVANIA.

NEW BOOKS.

Text-book of Physiological Chemistry. By EMIL ABDERHALDEN. Translated by WILLIAM T. HALL and GEORGE DEFREN. New York: John Wiley and Sons. xiii + 722 pp. Price, \$5.00 *net*.

One may almost take for granted that a book by so versatile an investigator as Professor Abderhalden will not be commonplace. This volume differs from those of his predecessors in the point of view taken towards the subject and the treatment accorded to the topics selected for consideration. Indeed, the title “Text book” seems somewhat misleading for a treatise of this character. The book is in no sense a catalogue of data regarding the composition of animal and plant fluids and structures; and it cannot pretend to include any rigidly systematic or uniform chemical survey of elementary biological tissues. Such knowledge regarding the make-up of parts of living things merely furnishes the starting point to-day in physiological-chemical considerations. The author maintains that the problems of metabolism have become the domain of the physiological chemist. “A final goal of research will be attained when we are able to follow in every separate phase, each and every foodstuff from the time of its introduction into the alimentary canal throughout its entire stay in the tissues until it is finally elimi-

¹ This paper was submitted to Prof. Jones who very cordially urged its publication, saying that he also was of the opinion that the explanation offered by Mr. Allen and himself was not sufficient.

nated; so that a whole chain, without any missing links, of all the different transformations and complicated processes will lie exposed to our view" (p. 1).

The book is rich in ideas. Intended, perhaps, primarily for the advanced student of biology and medicine, it will also appeal especially to the organic chemist, who may come to recognize through it that test tube reactions and beaker experiments are at most inadequate imitations of physiological processes. "The chemical decompositions in the tissues do not take place *beside* the 'physiological processes,' but are bound up in them" (p. 3). We quite agree with the author in reminding his readers that "although chemical investigation has often served to give us better understanding concerning many obscure biological processes, we must not forget that a clear conception is lacking in regard to the most important changes. We are obliged to resort here almost exclusively to experiments with animals" (p. 306).

One will look in vain in most of the lectures for references to the work of American investigators. This fact is the more surprising because the original has been translated by American chemists and specially revised by the author for the present American edition. As might be expected in view of the author's unique experience as an investigator, the subject of the proteins receives detailed consideration in an interesting way. Professor Abderhalden has also expanded upon his doctrines regarding the functions of digestion in nutrition. By means of breaking down the foodstuffs into comparatively simple compounds, the individual makes the cells of its tissues largely independent of the nature of the food. The way the elements are originally combined in foods, whether they are of animal or vegetable origin, is a matter of indifference, provided the material is capable of decomposition, for from the degradation fragments, or building stones, the organism can readily construct the kinds of tissues which it specifically desires. This is distinctly a modern view.

The "Inorganic Foods" are discussed at considerable length in a spirit which reminds one of Bunge's teaching. Two concluding chapters deal with some timely problems of biological import which may be approached from chemical standpoints. They include such topics as: the "biological reaction;" inheritance and biochemical anomalies; toxins and Ehrlich's theory; and numerous others which expose with rare originality some promising domains of biochemical research.

The translation has in general preserved the spirit of the original lectures without sacrifice of good English expression. A casual review indicates an occasional error, typographical or otherwise. For example, "Ananas" is translated as *banana*, instead of *pineapple* (p. 168); "Denaturierung" is reproduced as *coagulation* (p. 131); "durch den Gehalt an Jod ausgezeichnet" is inadequately rendered "contains a *large per-*

centage of iodine" (p. 132): 4 ‰ becomes four per cent. (p. 527); "Hyperglukämie" is given as glucohemia (p. 309). It is unfortunate that the word "albumins" has been retained in the generic sense by the translators, and that nucleoprotein appears in one part of the book, with protein in another. The adopted rules of spelling have not been rigorously followed. Thus of two protamines, one becomes *salmine*, the other *clupein* (p. 130). Such details are however, of minor account in a book which deserves cordial recommendation for unusual novelty in presentation, entertaining originality, and suggestive points of view. We need more books which propound problems as well as solve them.

LAFAYETTE B. MENDEL.

A Text Book of Inorganic Chemistry. BY A. F. HOLLEMAN. Issued in English in coöperation with H. C. Cooper. Third English edition, partly rewritten, 8vo, viii + 502 pp., 81 figures. New York: John Wiley and Sons. Price, \$2.50.

According to the statement of the preface, this edition represents a thorough revision of the work by both the Dutch author and the American editor. The portions on the phase rule, spectroscopy, radioactivity, iron-carbon system and metal-ammonia compounds have been largely rewritten and the chapters on colloids, experimental determination of equivalent weights and unity of matter are entirely new. In view of what has been written by some chemists of eminent authority it is refreshing to find one who states that it is the province of science to seek an explanation of phenomena and that "the various attempts at explanations constitute the most important part of science." A little further on, however, we find the statement that "the principle of the indestructibility of matter lies originally at the basis of our thinking. It is entirely incorrect to suppose that it was established by experimentation." This can scarcely be considered as true, historically—nor is it entirely consistent with recent speculations about the relation between matter and energy, which are referred to, later, in the book. The book as a whole gives a very satisfactory presentation of fundamental principles and of the more important facts of chemistry, including important recent discoveries and suitable reference to some of the newest speculations connected with these.

W. A. N.

Die Lagerung der Atome im Raume. VON J. H. VAN'T HOFF. Dritte umgearbeitete und vermehrte Auflage. Vieweg u. Sohn. 1908. S. xv + 147. Preis geheftet, M. 4.50.

In the preparation of this new edition Prof. van't Hoff was assisted by Dr. Just. The text of the previous edition has been largely rewritten and much new material added, so as to bring it well up to date. This is particularly true in the fields of enzyme action and of the stereochemistry of elements other than carbon. The chapter on cyclic binding now