

**PRINCIPLES OF THEORETICAL
CHEMISTRY, WITH SPECIAL
REFERENCE TO THE
CONSTITUTION OF CHEMICAL
COMPOUNDS**

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Principles of theoretical chemistry, with special reference to the constitution of chemical compounds by Ira Remsen

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BY
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 PROFESSOR OF CHEMISTRY IN THE JOHNS HOPKINS UNIVERSITY.



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PHILADELPHIA:
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PREFACE.

THIS little book is intended to furnish the student with a simple statement of the fundamental principles of what is commonly called Theoretical Chemistry. The subject is, of course, not exhausted; many things have purposely been left out, either because they have not yet reached such a stage of development as to entitle them to a place among the fundamental principles, or because it was thought better to emphasize more strongly those principles which are treated. Should the reader miss anything which he expected to find, he will please carefully consider whether the grounds referred to are a sufficient excuse for the omission.

The imperfections that will be noticed are, partly at least, due to the imperfection of our knowledge on some of the subjects discussed. For instance, it seems to be impossible for us at present to treat the subject of Valence in such a way as to lead to satisfactory results, mainly for the reason that we know so little in regard to it. Whatever view of this property one may take, he will find some difficulties which he cannot surmount.

As for the value of the structural formulas, which are discussed at some length in the second part of the book, it need only be said that, if it be borne in mind what they are intended to represent, they are not quite so absurd as some chemists are just now trying to make us believe they are. These formulas certainly represent known facts in regard to the constitution of chemical com-

pounds. They do not represent these compounds as a photograph, for example, represents a building; but rather somewhat in the same way that, in Physics, lines represent forces in their magnitude and direction. Take the formulas for what they are, and they have considerable value. Try to find in them the architectural plans of the chemical molecules, and they appear absurd. But it is very unjust to find fault with a thing for not doing what it never pretended to do, and what its originators have distinctly stated it could not do.

A careful study of this book will, it is believed, be of assistance in showing exactly upon what basis our conceptions of chemical constitution rest. Whether our ideas are good or bad, they deserve to be studied, for the simple reason that they are held by nearly all the working chemists of the day, and much of the work that is being done in the principal laboratories is a result of these prevailing ideas.

I. R.

BALTIMORE, February, 1877.

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