did not use the concept of energy nor, to split hairs, did Faraday "conclude" that the laws of electrolysis showed the atomic nature of electricity. (He saw the possibility of this conclusion but refrained from drawing it because of his doubts as to the reality of the atoms of matter). None of these mistakes is of any importance, but they are perhaps of some interest as showing how great reputations grow even greater by attracting to themselves some of the material of lesser ones.

"The Study of the Physical World," by three of the faculty of the Chicago City Colleges, will be discussed more briefly, not that it is less deserving of attention but that much can be said about it quickly in saying that in many respects it is intermediate between the two books just reviewed. Its use of mathematics is somewhat less than that in "Physical Science," and the treatment is more descriptive and hence, in the quantitative sciences, somewhat less exact. The economic and social consequences of discovery and invention are given more attention than in "Physical Science" without being stressed as strongly as in "Man's Physical Universe." In the relative emphasis given to general principles and illustrative facts, it is nearer to the former book, and the attempt is made throughout to have the facts really illustrate the principles. This purpose is aided by a clear and straightforward style of writing. Unfortunately in the attempt to make hard things easier, there are some over-simplifications and a good many errors, some of them rather serious. An example of over-simplification is in the treatment of atomic structure, in which the illustrations show the electronic orbits of the older quantum theory, and nothing in the text indicates that recent developments have required a different description. Probably the most serious errors are in the treatment of heat and kinetic theory. Here the energy of linear motion of the molecules of a gas is taken as the whole internal energy, which would mean that all gases have the same specific heats. A fallacious derivation of Carnot's theorem is based on the misconception that the second law of thermodynamics is a corollary of the first. The human body is described as an engine transforming heat to work, although it has no temperature difference which could maintain anything like its actual efficiency if this were true.

Although at first sight the sequence of topics in this book appears rather haphazard, reading through the text shows, on the contrary, that it is quite careful. There are few places in which reference needs to be made to anything ahead, an achievement which must have given the authors as much trouble as it saves the reader.

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ORGANIC CHEMISTRY

Textbook of Organic Chemistry. By E. WERTHEIM. Second edition. 867 pp., including 113 text figures, colored plates, portraits, industrial flow sheets, tables, etc. Philadelphia: The Blakiston Company. 1945. $4.00.

How well the first edition of this excellent text was received may be gathered from the fact that, since its appearance in May, 1939, eight reprintings have been necessary. This new edition, therefore, will be welcomed warmly by the many friends already won by its predecessor.

As the author states in his preface, the general plan of the book, its aims and objects, are essentially those set forth in the preface to the previous edition. Some rearrangement of subject-matter has been made, and new data and interpretations have been incorporated to bring the text up to date. These include new tables, charts, colored plates of molecular models, numerical problems and additional review questions.

Detailed descriptions of individual compounds have been replaced by group reactions, class properties, tables of all kinds, charts and summaries.

No more fitting frontispiece could have been selected for this work than the portrait of Emil Fischer which appears therein, for he was truly one of the outstanding builders of the science. The picture is an admirable likeness as the writer remembers him at the height of his career, when Fischer's great teacher, Adolf von Baeyer, used to say of him that he was a more brilliant organic chemist than the master under whom he had studied.

The book is heartily recommended, as a two-semester beginners' course, to meet the needs of students planning to major or specialize in organic chemistry, as well as for those who are taking chemical engineering, premedical or pharmaceutical courses.

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