

authors, but whose occurrence there is doubtful, is given in an appendix, where the alleged claims of each to a place in the Michigan fauna are set forth. A bibliography of some twenty-five closely printed pages, a glossary of technical terms, a list of contributors to the work, and an index round out the volume, which will take its place among the best of the state ornithological manuals.

J. A. A.

*A School Chemistry.* By F. R. L. WILSON, M.A., Assistant Master at Charterhouse, and G. W. HEDLEY, M.A., Head Science Master, Military and Civil Side Cheltenham College. Oxford, H. Frowde. 1912.

This work has been prepared to supply a demand for a shorter course than the author's "Elementary Chemistry." One who has completed the work in a satisfactory manner is prepared to take the matriculation examinations for a number of English universities. The directions for work are very full and the selection and arrangement of experiments are excellent. Wherever possible the experiments are carried out quantitatively and questions and problems are introduced at the end of each chapter. The use of this book by a student should develop his powers of observation and scientific method of reasoning and give him a good insight into the fundamental principles of chemistry.

J. E. G.

*Practical Chemistry for Engineering Students.* By A. J. HALE, B.Sc. (London), with an introductory note by Professor R. MELDOLA. London, Longmans, Green & Co. 1912. \$1.00 net.

In the introductory note attention is called to the fact that while chemistry is recognized as necessary for engineering students, owing to the short time at their disposal for this subject and the lack of appreciation of its value by the students themselves, the course in this subject must be so arranged as to give as much as possible in a short time. In order to get some training in quantitative analysis they must know some general chemistry and

qualitative analysis. Although this book is intended primarily for engineering students it is possible, by the selection of certain designated experiments, to use it in connection with a course in the chemistry of building materials. The experiments in general chemistry are well selected to bring out the general principles of the subject, and the experiments are arranged in such a manner as will bring out the quantitative relations whenever possible. This is followed by a short course on qualitative analysis and work in quantitative analysis, the latter being selected to give practice in the preparation of standard solutions, gravimetric and volumetric determinations and methods of analysis of materials of special importance for the engineer, such as water analysis, determinations of the value of fuel, furnace gases, analysis of cements and alloys. While the general method here used would be approved by most chemists, the necessarily limited number of quantitative methods which can be given would no doubt lead to a wide divergence of opinion as to the ones best suited for the purpose.

J. E. G.

*Review Questions and Problems in Chemistry.*

By M. S. H. UNGER, A.M., Head Master, St. John's School, Manlius, N. Y. Ginn & Co. 50 cents.

An excellent manual for use in reviewing classes or formulating examination questions in preparatory school work, covering as it does all the material necessary for college entrance or college board examinations.

J. E. G.

#### SPECIAL ARTICLES

##### THE TEMPERATURE COEFFICIENT OF THE COAGULATION CAUSED BY ULTRAVIOLET LIGHT

It has been pointed out in a previous paper<sup>1</sup> that certain proteins coagulate when exposed to ultraviolet light. In order to learn something about the nature of this reaction it seemed desirable to investigate its temperature coefficient. As photochemical reactions in general are nearly independent of tempera-

<sup>1</sup> SCIENCE, N. S., 37: 24-25, 1913.