

published work on similar lines. With remarkable insight he speaks of "capillary condensation" at the interface between heterogeneous liquids, the modern notion of adsorption.

Three papers by Selmi (1845, 1847, 1850) disclose experiments and deductions little known to the majority of students. He recognised many colloidal solutions, naming them "pseudo-solutions," and anticipated the importance of the organic colloids. The pseudo-solutions could be coagulated by electrolytes, a fairly wide selection being tried out. The paper by Selmi and Sobrero, dealing with sulphur sols, is very important historically. A paper by Graham, "On the Properties of Silicic Acid and other Analogous Colloidal Substances," introduces nomenclature now firmly established.

The colloidal chemistry of metals has attracted numerous workers, and the subject lends itself admirably to quantitative treatment. It is satisfactory, therefore, to find the classic papers of Faraday (on gold sols), Muthmann (on silver sols), and Carey Lea (on silver sols). Faraday believed that his ruby sols contained solid gold in extremely fine division, and he mentions the use of a light cone to show up the particles; the Tyndall cone should really be termed the Faraday-Tyndall cone. Muthmann (1887) published his experiments on the dialysis of metal sols, an outstanding achievement in colloid chemistry. Carey Lea's work is somewhat better known, a complete edition of his papers having been translated and edited by Lüppe-Cramer. The remarkable publication of van Bemmelen (1888), "On the Nature of Colloids and their Water Content," is essential to the study of gels, and pointed to a new field in colloid chemistry.

Mr. Hatschek has provided most useful notes to all these papers, and he is to be congratulated on his work as editor and translator. The publishers have also done their work well.

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Introductory Geology: for Use in Universities, Colleges, Schools of Science, etc., and for the General Reader.
Part 1: Physical Geology, by Prof. Louis V. Pirsson;
Part 2: Outlines of Historical Geology, by Prof. Charles Schuchert. Pp. x+693. (New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1924.) 20s. net.

THE text of Part 1, "Physical Geology," first appeared in 1915 in Pirsson and Schuchert's "Text-Book of Geology," a revised second edition of which was published in 1920. With the exception of the chapter on ore deposits, which has been rewritten by Prof. A. M. Bateman, Part 1 in the present volume is reprinted from the second edition of the "Text-Book." The subject is treated under two main heads, dynamical geology and structural geology. In the first section the various geological agents and their work are dealt with fully but concisely, the geological work of organic life not being neglected. The second section is a well-arranged and comprehensive account of the composition, character, relations, and structures of the rocks forming the earth's crust. In scope and treatment the whole is an excellent introduction to the subject for students, and it must also be of interest to the general reader. The illustrations are good and include both reproductions of photographs and diagrams. There is an appendix on important minerals.

Part 2, "Outlines of Historical Geology," is a greatly reduced version of the author's "Historical Geology" in the "Text-Book of Geology" of Pirsson and Schuchert. In thus cutting down the original manuscript, the author has succeeded in producing a book more suitable as an introduction to the subject. The contents are well arranged, the first chapters dealing briefly with the changing aspect of the earth's surface, evolution, fossils, and the geological record, and thus prepare the way for an account of the history of the earth during the successive geological periods. This account is related with special reference to North America, and these chapters are therefore mainly a geological history of that country. Other chapters are devoted to the coming of land life, the evolution of mammals, and man. There are abundant illustrations of fossils and restorations together with numerous palæogeographical maps. A folding geological map of North America is appended. The volume includes a very full index.

The Natural History of Wicken Fen. Edited by Prof. J. Stanley Gardiner. Part 2. Pp. 65-171. (Cambridge: Bowes and Bowes, 1925.) 6s. net.

THE second part of this valuable work on the natural history of Wicken Fen includes an account of the dragon flies, the bugs, the Ichneumonidæ and some of the other less popular families of insects, the spiders, the wood lice, the leeches and the mollusca. It also contains an account of some observations on the hydrogen ion concentration of the waters of the Fen, and on its Phytoplankton, and an interesting essay by Dr. A. H. Evans on the history of Wicken and Burwell Fens.

We may congratulate the editor on the style in which his contributors have written their parts, for they write not only with authority on their several subjects, but also in a manner that interests the naturalist who has no special knowledge of the groups that are described. In the literature of the British fauna there are found many records which are simply unintelligible to any but the highly specialised systematists. There are no suggestions to excite the interest of the more general reader on the habits, associations, rarity, and other points of interest of the animals included in the long lists of specific names. There is no article in this volume to which this criticism could be fairly applied, for in every one of them we seem to catch the spirit of the true naturalist instead of that of the mere collector. With this little volume in his hand a visitor would have at least some idea as to what to look for and how to find it.

Mr. Saunder's essay on the hydrogen ion concentration of the water is a novelty in works of this description, but we hope it will be followed by others of a similar kind. It has often been a puzzle to naturalists why some ponds are so rich in their microfauna and others so poor. Is the solution of this puzzle to be found in the pH ?

Reference cannot be made in detail to the individual essays in this part of the series, but as a whole it affords additional commendation for the wisdom and public spirit of those whose efforts have led to the preservation of Wicken Fen from the destructive forces of modern civilisation. The series should be in the library of every naturalist.