Soil development, by Barshad, deals with the methodology for interpreting soil-profile development in terms of the effect of developmental factors on parent material. Chemical composition, by Lawton, covers the gross elemental composition of primary minerals and soils.

Soil colloids are described by Toth through their schematic crystal structures and ion-exchange properties. But the exchange phenomena itself is rather thoroughly and competently explored in a separate chapter, by Wiklander, dealing with ion-exchange formulas, the Donnan equilibrium, membrane potentials, amphoteric reactions, and ion-exchange reactions between solids.

The chapter on soil organic matter, by Fraser, discusses plant constituents and their decomposition products. Kardos discusses soil fixation of plant nutrients and the chemical reactions involved that have special implications in soil fertility. Oxidation-reduction processes with respect to soil development and fertility are discussed by Merkle, while Thorne and Seatz cover the chemistry of acid, alkaline, alkali, and saline soils.

The world distribution of trace elements and their behavior in soils are described by Mitchell. The relationship of soil chemistry to plant nutrition, by Mehlich and Drake, forms the concluding chapter. It deals with ion adsorption by plant roots and nutrient availability as affected by soil reactions. An appendix, by Prince, on routine soil analysis is included.

Editor Bear and the authors are to be congratulated on this valuable contribution to the field of soil chemistry. Each chapter is well written and adequately documented. It is a book every worker in soil chemistry and soil fertility should possess, and it would make an excellent text or reference book for an advanced course in the principles of soil chemistry.

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Flora of Winnebago County, Illinois. Egbert W. Fell. Nature Conservancy, Washington, D.C., 1955. 207 pp. Cloth, $3.50; paper, $2.75.

Those concerned with the flora, vegetation, or ecology of the Middle West will be interested in this new book on one of the counties on the prairie border in northern Illinois. This book is the result of many years of careful study of the natural history of the northern part of Illinois; the author went there in 1921 to live.

The introduction is a description of the region, its geography, geology, climate, vegetation, and the range of habitats, with statistics on the geographic relationships of the components of the flora. The main part of the book is an annotated catalog of the vascular plants, with information on the local occurrence of each and interesting notes that particularly concern the plants in this county. Accompanying this are 33 pages of line drawings by the author, illustrating many of the more interesting species. A folded map in the back clarifies the local geography of the county, and a smaller map shows the areal relationships of original prairie and woodland and present-day wooded land.

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Physics and Microphysics. Louis de Broglie. Translated by Martin Davidson. With a foreword by A. Einstein. Pantheon, New York, 1955. 286 pp. $4.50.

This book is a collection of lectures and essays, for the most part, written, I would estimate, more than a decade ago. They suffer from the usual diseases of such a collection of much repetition and overlap. Many of the comments on the most recent scientific developments are seriously out of date, in spite of valiant efforts by the translator in the form of notes.

The book is divided into three parts. In the first, entitled, "Science," the author describes recent developments in science with special emphasis on wave mechanics, nuclear physics, and relativity. A historical approach is employed. These chapters are very lucidly written and can be understood by the nonspecialist, although they contain very little that is new for a competent physicist. The second section is entitled "Scientific philosophy." Here there is much emphasis on the comparison of space and time in classical and quantum physics and the relationship of this question to the wave-particle dualism.

One does not always agree with de Broglie, but his ideas are very interesting and thought-provoking. The road to a great discovery is not an easy one, but, as de Broglie points out in an essay on personal memories of the beginning of wave mechanics, a discovery such as the one he made presents many problems of understanding before it can become completely useful. He discusses the blind alleys he followed in an essay of great interest to me and, I am sure, to other physicists as well as to students of the history of science.

Another chapter in this section that is most ably presented is entitled, "The grandeur and moral value of science." On the other hand, the chapter on the relationship of modern science and the philosophy of Bergson was rather disappointing, probably because only a summary of the chapter is presented and is therefore much too sketchy to be satisfying. There are, however, many other hints throughout the book on the parallels between Bergson's philosophy and modern physics, which I hope de Broglie will someday discuss more extensively in a separate volume.

The third section is entitled "History of the sciences" and contains essays on the future of physics, the relationship of pure and applied science, a sketch on the history of the radio, and finally some remarks on nuclear energy, which, when one remembers that they were written before the explosion of the first atomic bomb, are remarkably prescient.

The book will prove to be of interest to the nonphysicist, who will find not only the philosophy of modern physics very clearly discussed but also such very important matters as the relationship between science and the scientist, between science and applied science, and between science and society illuminated by cogent and stimulating concepts.

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Ordovician Cephalopod Fauna of Baffin Island. Memoir 62. A. K. Miller, Walter Youngquist, and Charles Collinson. Geological Society of America, New York, 1954. vii + 234 pp. Illus. + plates.

The publication of this volume in the memoir series of the Geological Society of America is very timely, in addition to being intrinsically valuable, because of current special activity of the Geological Survey of Canada in exploration of the arctic region, including Baffinland. Several field parties working in Baffinland in the summer of 1955 have added materially to knowledge of areal geology and structure; a preliminary report on this work is now in preparation.

The study by Miller and coauthors is concerned primarily with the characters exhibited by 23 genera of nautiloid cephalopods obtained from a single locality (Silliman's Fossil Mount) near the southeastern extremity of Baffinland. Brief descriptions and excellent illustrations of various brachiopods, corals, and the widely distributed spongelike fossils (*Receptaculites*) are given also, and the volume contains a report on 23 species (four new genera and subgenera) of trilobites (by H. B. Whittington) as well