On the whole the book may be pronounced excellent—one that every broad-minded business man should have, and that deserves the wide acceptance in the colleges that it is finding.

To be adopted as a text-book on economic geology by such an authority on that particular subject as Professor Geo. P. Merrill is enough to show that it is indeed a good one.

A. C. LANE.

Die Riechstoffe. By Dr. GEORG COHN. Braunschweig, F. Vieweg und Sohn. 1904. Pp. 219.

This is Section II., Group 2, Vol. VI., of Bolley-Engler's well-known 'Handbuch der chemischen Technologie,' which is now published in this separate form for the convenience of those interested in the study of the perfumes.

The book is divided into the following chapters: I., Definition of a Perfume; II., Literature; III., History of Perfumes; IV., Occurrence of Perfumes in Nature; V., Preparation of Perfumes; VI., Physical Properties of Perfumes; VII., Chemical Behavior of Perfumes; VIII., Quantitative Estimation of Perfumes; IX., Physiological Action of Perfumes; X., Use of Perfumes; Addenda, and Index.

Certain branches of organic chemistry have developed so rapidly during the past few years as to have risen almost to the rank of separate sciences. The chemistry of the dyestuffs and of the synthetic drugs, are cases in point. While the chemistry of the perfumes has not experienced so great a development as these, it has, nevertheless, reached the point where special books on the subject are necessary, and many have already been published. The history of perfumery goes back to remotest antiquity, but that of the chemistry of the perfumes is comparatively recent.

The book under review gives a concise summary of our present knowledge of the subject, including the chemical, physical and physiological properties of the various perfumes, together with their methods of preparation. The synthetical preparation of perfume substances, and the methods of obtaining perfumes from natural sources, particularly, are treated very fully.

All plants which yield ethereal oils are classified according to their natural families; and this list is supplemented by an alphabetical tabulation of all known ethereal oils, giving their physical constants and chemical constituents. The composition of various artificial ethereal oils, at least so far as ascertainable from the patent literature, is given in a later chapter (X.).

In the special part (included in chapter V.), 108 pages are devoted to a detailed discussion of the various perfume substances. The classification is based upon chemical structure, and includes the following groups: Hydrocarbons, alcohols, acetales, ethers, esters, lactones, aldehydes, ketones, phenols and phenolic ethers, nitro compounds, and bases. The methods of preparation and the characteristic reactions of the various groups are given.

The references to the literature throughout are numerous. The importance of the patent literature is recognized, and not only are references given to patents in the text, but there is also a separate classified list of all German patents covering methods of isolation or preparation of perfume substances. The different European factories which manufacture perfumes are also noted.

Trade statistics, however, are almost wholly lacking. Many reports have been published in recent years on the production of ethereal oils and perfume substances in various parts of the world, the consumption of flowers for this purpose, cost of same, percentage of oil yielded per pound of flowers, and so forth. A *résumé* of such data would have been interesting.

The book should prove a useful compilation for all interested in this branch of organic chemistry.

Die ätherischen Oele nach ihren chemischen Bestandteilen unter Berüsksichtigung der geschichtlichen Entwicklung. By Dr. F. W. SEMMLER, ord. Honorarprofessor an der Universität Greifswald. Leipzig, Von Veit & Company. 1905. Erste Band; Erste Lieferung; Allgemeiner Teil. Large

8vo. Pp. 192. Price, Mk. 7.50 per Lieferung.

According to the announcement, the above work is to consist of three volumes, published in twelve separate parts, and will be completed in 1906. The first volume will contain the general part and the methane derivatives; the second, the hydrogenized cyclic compounds; and the third, the benzene derivatives, followed by a general index.

The appearance of this great work will be welcomed by all interested in the chemistry of the essential oils. The name of its author is sufficient guarantee that the work will be well and thoroughly done, for Professor Semmler's twenty years' experience in this field has made him exceptionally well qualified to undertake such a task. It is not too much to say that when complete this is destined to be the standard reference work on the subject, for, if carried out as at present planned, it will be the most extensive separate treatise extant on the chemistry of the constituents of essential oils. It is likely also to impart an added stimulus to investigations in this branch of organic chemistry, and thus produce a rich fruitage of results of both theoretical and practical value.

This first part contains the chapters on the methods by which the ethereal oils are obtained, their origin and occurrence in plants, and the general properties of their constituents, both physical and chemical. In discussing the general chemical properties of these constituents, the latter are classified according to their structure, and the following groups are taken up in this first part: (1) hydrocarbons; (2) alcohols; (3) aldehydes and ketones; (4) oxides; (5) acids and esters, and (6) phenols (in part).

The subject matter is well arranged and clearly presented. The type and paper are excellent. The work is one of such importance that it should, of course, be in every well-equipped chemical library. That it will really be completed in 1906 is not unlikely, as Professor Semmler is now hard at work in Berlin on his manuscripts and proof.

Marston Taylor Bogert.

SCIENTIFIC JOURNALS AND ARTICLES.

The American Museum Journal for January is styled the Crepidula Number, the leading article, by B. E. Dahlgren, being 'The Development of a Mollusk' and intended as a guide to the series of models illustrating the development of *Crepidula fornicata,* recently placed on exhibition. Another article briefly describes 'The Collections Illustrating the Rocks and Minerals of Manhattan Island,' and it is noted that a complete list of the minerals would include about one hundred species and varieties. 'The Department of Vertebrate Paleontology Explorations of 1906' notes the discovery on the last day of a six years' search, of a specimen of *Orohippus,* and the end of the work in the famous Bone Cabin dinosaur quarry, a locality which has yielded many and very perfect specimens of these huge reptiles. We are also told of the discovery of the huge carnivorous dinosaur, nearly forty feet long, appropriately named *Tyrannosaurus rex,* the tyrant reptilian king. Many interesting notes, and a schedule of the lecture courses are included in the number.

The Museums Journal of Great Britain for December contains an account of the history, development and arrangement of the Hastings Museum, Victoria Institute, Worcester, by W. H. Edwards, and suggestions for 'A Zoological Theatre' to form an adjunct to a zoological garden. Among the reviews of museum publications, those of several American museums are very favorably mentioned. There are the usual numerous and interesting notes.

The Museum News of the Brooklyn Institute for January has a brief article on 'Educational Features of the Central Museum,' calling attention to some special features of the exhibits; there is a description of some important Roman mosaics from North Africa recently placed on exhibition and a note on a group of mountain goats just added to the collection. The leading article in the section devoted to the Children's Museum is 'The Story of a Piece of Coal.' Lectures are announced for both museums.