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.

The Bulletin of the College of Charleston Museum is a comparatively recent addition to the list of publications whose object is to popularize the work of museums and keep the public informed of what is being done. The December number is mainly devoted to an article on whales and dolphins and gives a brief account of the cetacea, notes on some of the museum examples of this group and a list of books on whales. The number also contains references to the occurrence of the roseate spoonbill near Charleston. Under the direction of Mr. Rea, the curator, the Charleston Museum is being rearranged, relabeled and generally 'modernized.'

WITH the beginning of the present year, the *American Electrician* has become part of the *Electrical World and Engineer,* and the journal will be known as *The Electrical World.*

SOCIETIES AND ACADEMIES.

THE PHILOSOPHICAL SOCIETY OF WASHINGTON.

THE 608th meeting was held on December 2, 1905.

Mr. J. E. Burbank spoke on 'Recent Work in Atmospheric Electricity,' with exhibition of instruments of the Carnegie Institution. The fundamental problem in atmospheric electricity is the source of the earth's electric field. The recent researches of Professors Elster and Geitel, Ebert, Gerdien and others have brought four new factors into the study, namely, the rate of dissipation of the earth's so-called permanent charge into the atmosphere; the ionization of the atmosphere; the action of the radioactive emanations present in the atmosphere, and the circulation of the atmospheric electricity in the form of vertical and convection currents.

The paper was largely devoted to a description of the instruments and methods used in measuring the ionization. The dispersion apparatus of Elster and Geitel and Ebert's aspiration apparatus or ion counter were described.

A new instrument recently devised by Dr. Gerdien, of Göttingen, Germany, was then shown. This is similar to Ebert's and consists of an outer cylinder 20 cm. in diameter through which air is drawn by means of a fan driven by hand. The inner electrode consists of a tube 1.4 cm. in diameter and 24 cm. long and is mounted on the post which carries the aluminum leaves of the electroscope. The loss in charge of this inner electrode is found for an interval of time, usually five minutes, during which air is drawn through the apparatus. From the known dimensions and electrostatic capacity of this cylinder condenser and its loss of potential we can calculate in absolute units the quantity λ represented by the product of the ionic charge (ϵ) into the number (n) of ions per c.c. and into mean specific velocity (v) (cms./sec. volts/cm.), and is known as the specific conductivity. The discussion of the formula showed that $\lambda = \epsilon nv$ was independent of the velocity of the air current within wide limits; hence independent of wind, etc. The specific conductivity is not a constant as with metals, but varies with the ionic content of the air.

Dr. Gerdien has used this instrument to measure conductivity in balloon ascensions to a height of 5,700 meters, and from a series of such observations together with observations of potential gradient has deduced values for the intensity of the vertical currents. These currents on the earth's surface amount to about 2.4×10^{-16} amperes per sq. cm.; at a height of 2,500 meters 0.8×10^{-16}, and at 5,000 meters 0.3×10^{-16} amperes, per sq. cm.

This instrument can be used in dense fogs or even during rain. The author secured some results on a sea voyage from Liverpool to Boston showing that λ for positive charges was of the same magnitude as for negative charges. Curves were exhibited showing the values of the conductivity when passing into and through a fog bank and also during a light shower. The values of λ in dense fog are about one tenth to one twentieth the value in clear air, but curves for both positive and negative conductivity follow each other very closely even in very rapid changes of ionization.

Professor Ebert has reported to Dr. Bauer that the eclipse observations on August 30, 1905, made by him at Palma, Majorca, in the Mediterranean with his ion counter gave a