preface, in which he relates the various opinions of ancient times concerning leeches. Professor J. Percy Moore has written a chapter on segmentation of the Hirudinea, and has worked up the families Erpobdellidae and Hirudidae, including the familiar large leeches of the type used in medicine, and the dreaded blood-sucking land leeches. Mr. W. A. Harding describes the Ichthyobdellidae and Glossiphonidae, which include just half of the species in the fauna. Among the Glossiphonidae are *Glossiphonia complanata* and *Helobdella stagnalis,* also found in North America. Most remarkable is the account of the ferocious land leeches of the genus *Haemadipsa.* Although these have been discussed by many writers, there is much still to be learned concerning them. In their local variations, with the formation of distinctive subspecies or closely related species, they are said to differ from the aquatic leeches, and follow more nearly the manner of evolution of the land snails. Moreover, several of the color-varieties are associated with land planarians which are similarly colored, suggesting mimicry. Altogether, the book is much more than a local fauna, and will rank as a standard work, indispensable to all who have occasion to study leeches.

T. D. A. COCKERELL
UNIVERSITY OF COLORADO

Vorgeschichtliches Jahrbuch für die Gesellschaft für vorgeschichtliche Forschung. Herausgegeben von MAX EBERT. Band II: Bibliographie des Jahres 1925 mit sechs Tafeln und einer Abbildung im Text. Berlin und Leipzig. Walter de Gruyter und Co., 1926.

THE Gesellschaft für vorgeschichtliche Forschung, founded in 1925, has for its object the advancement of Prehistory in all its fields. Its managing committee consists of Max Ebert (chairman), Königsberg; O. Almgren, Upsala; G. Karo, Halle; B. Meissner, Berlin; H. Obermaier, Madrid; H. Ranke, Heidelberg.

The 344 pages of the Prehistoric Year Book form a fair criterion of the ever-increasing activity in the general field of prehistory. All but seventy-eight pages are given over to bibliography, only the more important references being accompanied by a review consisting of one or at the most a few paragraphs. This "review" of the literature comes under four heads: A, Europe—General; B, Paleolithic and Mesolithic; C, Europe—Neolithic and later periods; D, Egypt; E, Palestine and Syria; F, the Near East.

The other features of the volume are: (1) an illustrated article on the excavation of prehistoric fortifications (twenty-two pages), (2) news of a scientific and personal nature, and (3) the index, consisting of twenty-eight pages. This is an Old World Year Book, as will be seen from the table of contents. That such a large and creditable volume is annually possible is a striking commentary on the rapidity with which our knowledge of Old World prehistory is expanding; it fully justifies the existence of our American School of Prehistoric Research, founded in 1921 in order that American students might the more readily obtain first-hand knowledge of Old World prehistoric records as well as to have a part in recovering and interpreting them.

GEORGE GRANT MACCURDY
YALE UNIVERSITY

SPECIAL ARTICLES

THE DECOMPOSITION OF AMMONIA ON IRON CATALYSTS

THE catalytic activity of a number of promoted iron catalysts used in the synthesis of NH_3 from N_2 and H_2 was investigated by the decomposition of NH_3 on specially prepared surfaces.[1]

The NH_3 catalyst consists of a fused mixture of pure artificial magnetite to which about 1 per cent. of aluminum oxide and 1 per cent. of an alkali oxide, usually potassium, has been added in the fusion process. The mixtures investigated included an unpromoted iron, an iron promoted with aluminum and potassium oxides, and a tin poisoned catalyst.

The surface upon which the decomposition took place was prepared by fusing the mixture of the finely powdered granules to a twisted platinum strip.[2] It was found that the coating process could be carried on through a range in temperature of from about 300° C. to 1,200° C. Very uniform coatings of the desired thickness of the mixture can be obtained so that the temperature of the coating was very uniform and easily controlled by varying the current through the strip. The chemical activity of these surfaces after a thorough reduction depended upon whether the catalyst mixture was coated in the reduced or metallic form, or in the unreduced or oxide form, and the temperature at which the coating takes place. Thus the rate of decomposition of NH_3 on a given catalyst mixture at a given temperature was found to vary four fold. The coated strip was mounted in a two liter decomposition chamber, and the increase in pressure with time, for a given temperature, was re-

[1] Preliminary results on the use of this method for the testings of catalysts was presented at the Jubilee Meetings of the American Chemical Society at Philadelphia in September, 1926.

[2] *Jour. Phys. Chem.,* 30, 525, 1926; *Jour.* Franklin Institute, May, 1927.