by Deslandres in the case of the positive column of the ordinary discharge with electrodes. The first group was entirely absent. It was interesting to find that some of the characteristic bands of the negative glow were also observed.

ERNEST MERRITT,
Secretary.

SCIENTIFIC BOOKS.

A Monograph of the Culicidæ or Mosquitoes. By FRED. V. THEOBALD, M.A. Volume III. London, printed by order of the trustees of the British Museum. 1903. Pp. xvii + 359; 193 text figures; 17 plates.

Interest in matters connected with mosquitoes has been increasing so rapidly of late, and so many students and physicians in all parts of the world have been taking up the investigation of this family of dipterous insects, that Mr. Theobald's monograph of 1901, published in two volumes of text and one volume of plates, was hardly in the hands of investigators before almost enough material had accumulated for another volume. Between April, 1901, and February, 1903, over one hundred collections were received at the British Museum, and the present volume includes consideration of this material. In the volume are described 23 new genera, 88 new species and 8 new varieties. At this point Volume III. stops. Since that time already 25 new collections have been received at the British Museum, and whatever new forms are contained in these and subsequent collections will be described in journals, and it is not proposed to issue another volume until the arrival of new species slackens and the subject has reached a more final stage. This means that for some time to come people wishing to identify mosquitoes must base their work primarily upon the three volumes published and afterwards consult all sorts of scientific periodicals, both biological and medical, for descriptions of new forms, which will necessitate some rather extensive card-cataloguing. In the meantime it may parenthetically be stated that no doubt Mr. Theobald will be glad to name specimens for persons sending them to him, and the writer holds the services of his force at Washington at the disposal of inquiring medical men and other culicidologists.

In Volume III. the British Museum authorities have abandoned the colored plates which formed so attractive and excellent a feature of Volumes I. and II., but the text contains many figures giving anatomical details of the new species, including a number of figures of various stages. The plates are all done by the collotype process from photographs, and are in the main very good. Careful drawings would have been much better than some of them, especially the heads on Plate IX. and the larva and pupa on Plate XVI.

In the preparation of this volume Mr. Theobald has shown great care and very good judgment. He has been most industrious in bringing together many points concerning the biology of different species in spite of the fact that his main interest seems to have been in the classification of the adults, and as a matter of course the volume is a mine of information concerning the geographic distribution of species. He had before him practically no additional material from North America in the preparation of Volume III., although he introduces some Central American forms, some from the West Indies and a number from South America. The bulk of his additional material, however, has come to him from Africa, India and Australasian regions.

One point which he brings out which will be of interest to North American students is his decision that *Anopheles walkeri,* which he described from specimens (number not given) collected at Lake Simcoe, Ontario, in September by E. M. Walker, is really a synonym of *Anopheles bifurcatus* Linnæus of Europe, a species of rather wide European distribution, occurring from Lapland to Italy and the Mediterranean islands.

Since the publication of Volumes I. and II. an important attempt has been made by M. Neveu-Lemaire to formulate a classification of mosquitoes mainly on palpal and venational characters. Mr. Theobald shows that while the French author in his classification upholds certain genera proposed by Theobald

himself and which were originally based almost entirely upon scale structure, certain others of his genera suffer from the application of this class of characters. The main objection to the palpal characters is their difficulty to the student, and, if possible, for convenient use tables for the separation of species should be based upon characters which can be studied without mutilating the specimens. This plea Mr. Theobald makes for the retention of his scale characters, since they can be made out with any compound microscope, and even with a high-power hand lens. Mr. Theobald deserves great credit for the work which he has done with scale characters, but there can be no doubt that the rational classification depends to a greater extent for its generic characters upon such distinctions as have been pointed out by Neveu-Lemaire. It will be rather difficult to draw the line, for example, between the 'narrow curved scales' and the 'broad curved scales' found upon the heads of certain mosquitoes, since there are curved scales which it would be difficult to distinguish as narrow or broad. There is a gradation, in other words, which makes it difficult in some cases to accept them as generic characters.

Mr. Theobald has done a great and lasting service to the medical profession and to the students of biology in producing this elaborate monograph, and deserves the thanks of all classes. The authorities of the British Museum should also be included in this vote of thanks, since they have published the results of his labor in very beautiful form.

L. O. Howard.

International Catalogue of Scientific Literature. G, Mineralogy including Petrology and Crystallography. First Annual Issue. Published for the International Council by the Royal Society of London. Vol. XI., 1903 (January). Pp. xiii + 208.

The general character and scope of this international catalogue have already been sketched in this magazine (Vol. XVI., 1902, p. 861). This volume embracing mineralogy, petrology and crystallography is of the same high quality that has characterized the earlier appearing volumes on other subjects. The scheme of classification of the subject catalogue is as follows, the numbers given being the so-called registration numbers by which each section is designated: 0000 to 0070, general, including philosophy, history and biography, periodicals, text-books, addresses, institutions and nomenclature; 10 to 19, general mineralogy, including chemistry, mode of occurrence, economic mineralogy and artificial minerals, etc.; 30 to 32, determinative mineralogy; 40, new mineral names; 50, descriptive mineralogy with alphabetical list of mineral names; 60, geographical distribution; 70 to 73, meteorites; 80 to 87, petrology, including igneous, sedimentary and metamorphic rocks, unclassified rocks and chemical analysis of rocks; 100 to 750, crystallography, including geometrical and mathematical crystallography (105 to 150), crystal structure and growth (200 to 240), physical and optical crystallography (300 to 440), chemical crystallography (500 to 540) and determinative crystallography (600 to 750).

This scheme and a topographic classification of localities is printed in four languages. The catalogue proper is introduced by an authors' catalogue containing 1,072 entries, comprising 53 pages. The remaining 120 pages contain the subject catalogue as above outlined. The catalogue fills a want much felt by all workers in science, and while alterations in the scheme, especially in the subject classification, may suggest themselves later as advisable, there can be only praise for the work accomplished. The fact that larger funds and more complete equipment of the several bureaus will in the future make it possible to keep the catalogue more nearly concurrent with the period whose work it records insures a still greater usefulness for the work.

Charles Palache.

SCIENTIFIC JOURNALS AND ARTICLES.

The Popular Science Monthly for February has for frontispiece a portrait of Professor W. G. Farlow, president of the American Association for the Advancement of Science, while the first article is the address of the late president, Ira Remsen, on 'Scientific Investigation