evidently the peculiarity of the process is to be sought in other causes.

Friedrich Müller first studied autolysis of the lung in croupous pneumonia, and described in detail its occurrence and the chemical products, among which are lysin, leucin, tyrosin, purin bases and phosphoric acid, of the digestive process. I have found that it is in the stage of gray hepatization that autolysis takes place quickly and perfectly, while in the stage of red hepatization it is very imperfect—a fact that can, I think, be attributed to the small number of pus cells present in the latter condition. But if the lung in unresolved pneumonia is exposed to conditions favoring autolysis, the process is slow and incomplete as compared with what takes place in gray hepatization. In gray hepatization, autolysis after death is a mark of the tendency during life of the exudate to become absorbed; in unresolved pneumonia the absence or reduction of autolysis is equally an indication of the future fate of the exudate, namely, during life to undergo organization.

I am, therefore, inclined to view unresolved pneumonia as an acute lobar pneumonia in which the inflammatory exudate, either because of some disproportion between the leucocytes and other constituents, or other cause as yet unknown, failing to autolyze perfectly, can not be absorbed, and hence undergoes organization.

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SCIENTIFIC BOOKS.

A Revision of the Lepidopterous Family Sphingidæ. By the Hon. WALTER ROTHSCHILD, Ph.D., and KARL JORDAN, M.A.L., Ph.D. Novitates Zoologicæ, Vol. IX., Supplement. Issued at the Zoological Museum, Tring, April, 1903. Pp. cxxxv + 972; plates I–LXVII. 4to.

This great work, based upon the splendid collections contained in the museum at Tring, and also upon all the other large collections in Europe as well as those in America, which have been carefully consulted, has occupied the learned authors fully eight years in its preparation. It is truly *opus magnificum.* On every page it gives evidence of the most painstaking and minute research, and is the first really satisfactory attempt to collate and bring into systematic review what has been done during the past one hundred and fifty years in relation to the large and interesting family of insects with which it deals.

The work falls into three parts: The Introduction, covering one hundred and thirty-five pages; the descriptive portion, occupying eight hundred and thirteen pages; and a Synonymic Catalogue of the Sphingidæ of the World, to which one hundred and sixty-seven pages are allotted. Sixteen of the plates are devoted to figuring hitherto little-known or hitherto undescribed species. These plates are executed in photo-colortype, or by the half-tone process. The remaining fifty-one plates, which are beautifully engraved upon stone, are devoted to the illustration of anatomical details. Evidently neither labor nor expense has been spared in making the treatise one of the most satisfactory pieces of monographic work which have ever issued from the press.

The introduction has value not merely for the lepidopterist, but for all students of the biologic sciences, inasmuch as the laws and methods of procedure, which should govern in systematic work, are taken up and discussed at length. The statements which are made as to the principles of nomenclature are especially worthy of study, and the conclusions reached are such as undoubtedly command the respect and win the adherence of all those who are sufficiently well versed in this subject to appreciate the position taken by the authors.

The hawkmoths are divided into two great groups, the Sphingidæ Asemanophoræ, including the subfamilies Acherontiinæ and Ambulicinæ; and the Sphingidæ Semanophoræ, including the subfamilies Sesiinæ, Philampelinæ, and Chœrocampinæ. The 'law of priority' has been strictly applied in ascertaining the generic names, which should be used.

The result may appear, to the student who is familiar with current nomenclature, in some cases strange, if not even startling, but the evidence submitted for the entire correctness of adopting the changes from current usage is, in the judgment of the present writer, cogent, and in almost every case entirely convincing. So far as the nomenclatorial adjustments touch familiar North American species, it may be worth while to point them out.

The species named *cingulata* by Drury is referred with its congeners to the genus *Herse* Oken. The genus *Protoparce* Burmeister receives into its embrace our species *sexta* = *carolina* Linnæus, *quinquemaculatus* = *celeus* Hübner, *occulta, rustica* and *brontes*. For the species named *hageni* Grote the genus *Isogramma* is erected; for *cupressi* Boisduval the genus *Isoparce* is proposed and described; and for *elsa* Strecker the genus *Dictyosoma* is set up. For *Sphinx plebeja* Fabricius the authors propose and describe the new genus *Atreus*. Inasmuch as *Atreus* is preoccupied in the Arachnida by Koch, the present writer proposes to substitute for it the generic name *Atreides* and this name will be given to the genus in 'The Moth Book,' which is now going through the press. To the genus *Hyloicus* are referred the species hitherto generally assigned to the genus *Sphinx* in American lists. Our species *modesta* Harris, which has recently quite erroneously been referred to the genus *Marumba* Moore, is put into the genus *Pachysphinx,* which is erected for its reception. Inasmuch as the type of the genus *Sphinx* Linnæus is undoubtedly *ocellata* Linnæus (see 'Systema Naturæ,' Ed. X., p. 489), the American congeners of this species are placed in that genus, and the name *Smerinthus* Latreille, hitherto almost universally applied to them, is dropped as a synonym. As the type of the genus *Sesia,* erected by Fabricius, is undoubtedly the species named *tantalus* by Linnæus, this generic name is retained for that species and its congeners. This will no doubt provoke protest from recent authors, but the step is logical, consistent, and in fact the only one which can be taken unless the 'law of priority' is to be set aside and disregarded. The generic name *Hæmorrhagia* is applied to *thysbe* Fabricius and its allies, while the genus *Macroglossum* Scopoli, of which the European *stellatarum* is the type, is placed in the Philampelinæ, at a wide remove from *Hæmorrhagia* (*Hemaris* auctorum), with which it has hitherto commonly been associated. Our common Morning Sphinx falls under the arrangement adopted into the genus *Celerio* and appears as *Celerio lineata.*

The work deserves the most careful study, and will remain a monument to the learning and the liberality of the distinguished nobleman and his erudite colleague, who have prepared it.

W. J. Holland.

Carnegie Museum,
June 12, 1903.

Variation in Animals and Plants. By H. M. Vernon, M.A., M.D., Fellow of Magdalen College, Oxford. New York, Henry Holt & Co. 1903. Pp. 415.

Since Darwin's 'Variation of Animals and Plants under Domestication' we have had no general résumé of the principles of variation. Yet this period has witnessed the rise (and fall) of many speculations on the subject, and for the past decade has yielded the solid fruits of biometric and experimental investigation.

This important gap is now filled by the well-arranged collection of data to be found in Vernon's book. These data are considered under three main headings as follows: 'The Facts of Variation'; 'The Causes of Variation'; and 'Variation in its Relation to Evolution.' In the first part some of the results of biometry are given without going into the more abstruse mathematical methods. In connection with the discussion of discontinuous variation De Vries's theory is considered in some detail. The causes of variation are classified as blastogenic and environmental, and several chapters are devoted to the latter class. In the third part the author discusses the action of natural selection on variations, and gives some of the evidence for the inheritance of acquired characters, based on the cumulative effects of the conditions of life