

Specific chemical substitutions are accompanied by definitely orientated changes of the crystal structure, indicating that particular chemical atoms occupy definitely localized positions in the chemical molecule, and therefore, as the molecule is the structural unit of the space-lattice, in the crystallographic structural unit.

This last principle, first definitely established by these researches, is regarded by the author as the most marked step in advance he has made.

Despite its highly specialized character the book is written in a style that is delightful and should surely be in the possession of every student of physical crystallography.

CHARLES PALACHE

*Elements of Mineralogy, Crystallography and Blowpipe Analysis from a Practical Standpoint.* By ALFRED J. MOSES, E.M., Ph.D., Professor of Mineralogy, Columbia University, and CHARLES L. PARSONS, B.S., Professor of Chemistry, New Hampshire College. Fourth edition, with 448 pages of text and 583 figures. Cloth, 6×9½. New York, D. Van Nostrand Company. 1909. \$2.50 net.

The fourth edition of this well-known textbook differs in no essential matters from the previous edition. The statistics of production of minerals of economic value have been revised, the figures given being those for 1907 and in part 1908. The book gives an excellent presentation of the main facts of mineralogy and deserves to be, as it doubtless is, largely used by teachers of the subject.

It is unfortunate that advantage has not been taken of the opportunity offered by this new edition to improve some of the very poor illustrations that mar certain pages, as well as to eliminate several confusing errors in the crystallographic figures and lettering.

CHARLES PALACHE

*Indian Insect Life.* A manual of the insects of the plains (Tropical India). By H. MAXWELL-LEFROY, Entomologist, Imperial Department of Agriculture for India, and F. M. HOWLETT, 2d Entomologist, published under the authority of the Government of India, Agricultural Research Institute,

Pusa. 4to, pp. 786, plates 84 (many colored), text figures 536. Calcutta and Simla, Thacker, Spink & Co.; W. Thacker & Co., 2 Creed Lane, London. 1909.

This attractive and well-illustrated volume gives, in convenient form, a summary account of the varied insect life of tropical India, in particular. This limitation necessarily precludes the discussion, except in an incidental manner, of the splendid fauna of the Himalayan region. There is much of interest in the work for the professional entomologist, while the amateur will find a large number of the more conspicuous or common insects noticed, accompanied in many instances by facts of great practical value.

The author finds it convenient to treat the varied forms under nine orders, namely, Aptera, Orthoptera, Neuroptera, Hymenoptera, Coleoptera, Lepidoptera, Thysanoptera, Diptera and Rhynchota (Hemiptera) following, in a large degree, the classification adopted by Sharp. The author's aim has been to produce a readable, convenient volume rather than to rigidly follow a classification with possible inconvenience to his readers. The introduction gives some observations upon the principles of classification, the relation of instinct and habit, the sources of information, and a discussion of the zoogeographical divisions of India, the faunal limits of the work thus being plainly defined. At the outset, insects are roughly classified according to food habits, they being divided, for example, into fruit insects, seed-eating insects, flower insects, etc. There is an illuminating chapter on insects and their relations to man, a much more vital topic in the tropics than in the temperate zone.

The space given to the discussion of the orders is necessarily unequal, owing to the fact that representatives of many Indian groups are comparatively unknown. A most attractive feature for the general student is found in the independent chapters or interludes dealing with such topics as: Where Insects Live, Cosmopolitan Insects, Deceptive Coloring, Relative Duration of Life, Insects and Flowers, How Insects Protect Themselves, etc., each of these summarizing from the en-