

author. This has many advantages but some drawbacks, as, for example, a rather sweepingly exact statement that in *Erebia epiphron* "The larval stage lasts 288 days".

References are made to variation, protective coloration and migration, sufficient at least to excite the interest; and, as one would expect from Mr. Frohawk, there is an excellent account of the relation of the larva of *L. arion* to ants. Only one misstatement has been noticed, and that not about a truly British insect; contrary to what is said on pp. 38 and 41, the Monarch butterfly has an adult life up to about ten months and has a definite period of semi-hibernation in the southern United States.

The classification and Latin names are the most up-to-date possible, that of the Royal Entomological Society's recent list, but the author shows either misapprehension or unbounded optimism where he refers to this as an "established International Rule" and a "permanent International Classification"; we wish that it were so! Among the English names we wonder if he is trying to introduce the law of priority when he replaces the well-known 'Gate-keeper' by the older 'Hedge Brown'.

On the whole an excellent book, particularly for the young naturalist in whom the desire for collecting can be replaced by wider biological interests.

C. B. W.

*Structural Geology: with Special Reference to Economic Deposits.* By Bohuslav Stočes and Charles Henry White. Pp. xv+460. (London: Macmillan and Co., Ltd., 1935.) 25s. net.

THE mining geologist who has a sound knowledge of the various types of crustal deformations and of the form, extent and position of mineral deposits of economic importance with their relationships to the host rocks, is well-equipped for one of the most important aspects of his work; and whilst experience in the field will always remain the best training ground, it is essential that he should be familiar with structural types of various kinds, particularly those encountered in certain mining areas in different parts of the world.

Hitherto, the mining geologist has been handicapped by the lack of a suitable treatise, for although it is true that a number of books on structural geology have been published, few of these appeal strongly to mining engineers and mining geologists, who prefer clear illustrations of dislocations and deformations as revealed by underground mining, to long and involved descriptions of structural types which are largely hypothetical and based only on surface indications. Dr. Stočes, professor of geology at the National School of Mines of Czechoslovakia, whose former work on this subject was published in both Czech and German, and Dr. White, who has had practical experience as a consulting mining geologist in many countries since his retirement from the professorship of mining and metallurgy at Harvard University, have rendered conspicuous service to mining engineers and mining geologists by the publication of this authoritative volume. It

differs from other books on structural geology in at least three important aspects: it is written specially for graduate and post-graduate students of applied geology; the reading matter has been wisely subordinated to remarkably clear and well-selected sketches, diagrams and photographs, numbering in all 663, almost two to every page; and the illustrations include a large number of the structural types encountered in mining areas in different parts of the world.

W. R. JONES.

*Inorganic and Theoretical Chemistry.* By Dr. F. Sherwood Taylor. Third edition. Pp. xiv+832+19 plates. (London: William Heinemann, Ltd., 1935.) 12s. 6d. net.

THE third edition of this book is only 14 pages longer than the first edition, but includes sections on most of the recent developments, such as *ortho*- and *para*-hydrogen, heavy hydrogen, neutrons and positrons, atomic transmutation and artificial radio-elements. The current view, that the nucleus is composed of protons and neutrons, is mentioned; but it is not adopted in the figure illustrating the isotopes of neon.

Certain weaknesses, which have persisted from the first edition, still call for comment. Thus, although a clear distinction is drawn between covalent and electrovalent links, salts are still occasionally formulated as covalent molecules, as when a fictitious ring-structure is assigned to barium peroxide (p. 600). Conversely, an ionic structure is incorrectly assigned to hydrogen bromide (p. 208), which is surely only ionised in presence of a 'base' or proton-acceptor. The student is also frequently misled by equations in which protons are shown instead of oxonium ions, as in the dissociation of water (p. 137), of acids (p. 186) and of hydrogen sulphide (p. 620). There is also a curious contradiction between the definition of a base (p. 186) and a subsequent statement that substances such as ammonia are "incorrectly called bases" (p. 194). These features, however, are only of minor importance in a book the merits of which have already been described in an earlier review (*NATURE*, 129, 919, June 25, 1932).

*Technical Gas Analysis.* By Dr. George Lunge. Revised and rewritten by Dr. H. R. Ambler. Pp. xvi+416. (London and Edinburgh: Gurney and Jackson, 1934.) 21s. net.

LUNGE's book has held the field during twenty years, so that the new edition is overdue. The book has been largely rewritten; it aims at being comprehensive of all processes and types of method, as well as giving detailed working descriptions of the more noteworthy.

Gas analysis increases in importance as more industrial operations are brought under scientific control, the degree of accuracy required varying according to circumstances: time is often an important factor. Continuous recording instruments are coming into use when possible. The book follows well-known lines, and is illustrated by diagrammatic drawings of the apparatus. It should find a place in all technical and analytical laboratories.