who have to deal with macroscopic and microscopic aspects of rocks without going deeper into the mineralogical and physico-chemical details of petrology.

The first, general, part (40 pp.) contains chapters on petrographic methods, on the main rock-forming minerals, and on formation and subdivision of rocks. In the second, special, part the authors devote 60 pages to the igneous, 20 to the sedimentary, and 30 to the metamorphic rocks. Texture and geologic appearance of igneous rocks as well as their subdivision according to Tröger are briefly mentioned. For the most important rock types at least two chemical analyses are given. The authors emphasize the importance of certain rocks for the formation of economic mineral deposits.

For sedimentary rocks, the usual subdivision into clastic, chemical, and biochemical ones (including phosphorites, ironstones, and copper-shales) is applied.

In spite of limited space, facies concept and the application of petrofabrics are mentioned, followed by the discussion of a few selected examples of metamorphic rocks.

E. F. STUMPFL

KRINOV (E. L.). *Principles of Meteoritics.* Translated from the Russian by IRENE VIDZIUNAS. Translation edited by HARRISON BROWN. (International Series of Monographs on Earth Sciences, vol. 7.) London and New York (Pergamon Press), 1960. xi + 535 pp., 154 text-figs., 7 plates. 70s. net.

In 1955 a book by E. L. Krinov entitled 'Основы метеоритики' was published in Moscow. This book dealt with all aspects of meteoritics largely from a Russian point of view although references were given to German and English literature. The book under review is a translation with some additions (but little revision) to bring the book up to date.

It cannot be said that the translation does justice to the original. Apart from the reproduction, which is 'by non-letterpress setting and photo-lithography', for which the publishers excuse themselves on the grounds of speed and cost, there are too many errors and examples of poor arrangement of tables and figures to make the book acceptable as it stands. There are several numerical errors in the text references to the list of literature at the end of the volume, five occurring between pages 162 and 176, and the setting of eighteen of the fifty-two tables sideways (instead of upright as in the Russian edition) makes reading tedious; in tables 4 and 19 it is necessary to turn the book upside down to read the

column headings. Similarly with the illustrations; even when the figure is printed upright, the caption often runs vertically, and in the case of fig. 152, which incidentally appears to have been printed upside down, the position of the caption makes the illustration incomprehensible. The literature references are not free from errors and in addition suffer from the defect that in many instances only the date and volume of the journal are quoted. The standard of English also is not what one has the right to expect.

One of the most interesting figures in the Russian edition is fig. 52 which shows on a map of Russia the place of fall and the nature (iron, stony iron, stone) of every meteorite known to have fallen in the U.S.S.R. This map is referred to in the text and Appendix I gives the necessary details of each meteorite. Whereas in the Russian edition no fault can be found with this map, the map in the English edition looks as if it has been started and then abandoned. In any event it is useless.

The book consists of eight chapters and three appendices, the headings of which are: I, Meteoritics as a branch of science; II, Motion and fall of Meteorites; III, Morphology of Meteorites; IV, Chemistry of Meteorites; V, Mineralogy and petrography of Meteorites; VI, Physical property of Meteorites; VII, Tektites and Silica Glass; VIII, The origin of Meteorites; Appendix I, Catalogue of Meteorites of the U.S.S.R.; Appendix II, Meteorites of rare type; Appendix III, Classification of the surface structure of the fusion crust of Meteorites (illustrated by the 7 plates). There are also the usual literature references and indexes. In Chapter VI the author describes mainly the work that has been done on the spectral reflectivity of stony meteorites, on the results of which he bases a classification of stony meteorites.

In addition to the avoidable shortcomings already mentioned, no attempt appears to have been made to revise the accounts of earlier results, shown by later work to be wrong or doubtful. Finally it must be said that whereas the Russian edition appears to have been a reasonably sound textbook, the English edition has suffered from indifferent editing.

A. A. M.