groups.' It is further the opinion of the reviewer, that if group-theory lemmas are to be used at all the concept of a 'group' should be made clear. (The word 'group' is used in such a way as to give the impression that it is some diagram of symmetry symbols e.g. in the expression 'a mechanical superposition of one trigonal and one digonal group.') As nothing is said about what constitutes a space group either from group theory or the geometrical point of view, no discussion is, or can be, given of possible operations. The difficulties met, especially in axial classes, can therefore not easily be foreseen. It seems more desirable first to discuss the scope of one's method than to use the general strategy—aided by procedures that are not generally discussed—for example in axial classes, especially as the basic method is abandoned unnecessarily in some other classes. It is true that 'If the reader turns to any full list of space groups of symmetry he may convince himself that in the present work all 230 space groups, without exception, have been discussed.', but he would probably not have been able to tell in advance why the discussion finished where it did.

We shall turn to some minor points. For the orthorhombic space groups—but only for them—atomic coordinates and structure factors are derived, which interrupts the general line.

On p. 2 Belov duly criticizes the use of point- and space-group symbols other than the Hermann–Mauguin ones. However, he very often uses the Schoenflies symbols—often standing by themselves—for point groups and even for space groups. The modifications of the Hermann–Mauguin notation introduced in the 1952 edition of the *International Tables* were not available when Belov's paper first appeared.

For rhombohedral cells, Belov first (Fig. 13) uses the obverse relation of the centred hexagonal cell but in deriving the enantiomorphous trigonal classes it seems as though he writes in terms of a reverse setting. The use of a changed parity notation of screw axes as compared so that used in the *International Tables* adds to the confusion.

Several misprints disturb the reading. Thus axis symbols in the Hermann–Mauguin notation might appear as an index. An index in a Schoenflies symbol is more often than not wrong or appears on the line. Axis indices in Hermann–Mauguin symbols (defining screw translations) sometimes fall out (or are purpously left out for agreement with the 1935 edition of the *International Tables*). This happens consistently in the derivation of space groups isomorphous with point groups *4mm*, *4/mmm*; *6mm*, *6/mmm*. (Some of these space groups are, for an unknown reason, later rederived with indices.) This is particularly disturbing since certain axial subgroups are found by discarding the symmetry planes—but the 'babies' come out well-shaped. It also conflicts with certain reasoning presupposing rotatory tetrads and hexads.

The general impression of Belov's monograph will depend on how much emphasis is placed on the title words 'Class-room' and 'Derivation'. Many unanswered questions will occur to the critical student as the derivation is not strict. To a person acquainted with underlying hypotheses and somewhat acquainted with, say, practical use of space-group diagrams, it gives an elegant exposition, above all of the space groups of the higher classes of the different systems.

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The Major Achievements of Science. By A. E. E. MCKENZIE. Two volumes, pp. xvi + [368]; [xii] + [195]. Cambridge: The University Press, 1960. Prices 30*s* and 17*s* 6*d*; school editions 20*s* and 12*s* 6*d*.

Vol. I contains an account of the historical development of the main generalizations of science and their philosophical implications. Vol. II contains a series of 91 extracts from original sources arranged in an order (only roughly chronological) suited to the chapter sequence of vol. I. The books are of great general interest to those beyond school age as well as to those below it.

It is salutary to find that crystallography does not rank among the 'major achievements' of science. The discovery of X-ray diffraction by von Laue gets five lines, as an introduction to Moseley's work on atomic numbers, and the Braggs are not mentioned.

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Die Entwicklungsgeschichte der Erde. Mit einem ABC der Geologie. Pp. 772. Leipzig: Brockhaus Verlag, 1959. Price DM 13·80.

This book has the additional title 'Brockhaus-Taschenbuch der Geologie', but it would need a large pocket to carry it. The first section (pp. 11–540) consists of a series of articles by named experts under the general headings Allgemeine Geologie, Historische Geologie, Paläontologie, and Die Verflectung von Erd- und Lebensgeschichte. Certain articles, like Die Mineralien (Rudolf Gaedeke) and Die Entstehung der Gesteine (Rudolf Gaedeke and Carl-Dietrich Werner) will be of special interest to crystallographers, though only the NaCl structure is illustrated. The second section (pp. 543–738) is an alphabetical dictionary of geological terms. The book ends with a guide to geological literature (mostly, but not entirely, German) and an extensive index to the first section. From its level and content this book should be of great value to German students of geology and to non-Germans needing to acquire technical vocabulary, and is good value at the price.

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