## BOOK REVIEWS

ROBERTSON (R. H. S.). *Mineral Use Guide or Robertson's Spiders' Webs.* London (Cleaver-Hume Press), 1960. 44 pp. ($7\frac{1}{2} \times 7\frac{1}{2}$ in.) including 32 diagrams. Price 21*s*.

This rather unusual book is a collection of 32 diagrams designed to indicate the industrial uses of some 50 selected mineral substances. Each diagram is designed like a spider's web filling an empty window frame, the mineral (or rock) name occupying a central circle enclosed in concentric rings showing the properties, grades, treatment processes, or reactions that determine the end uses shown between radial lines extending to the frame. Although the diagrams have a common pattern this lends itself to variation to suit the different requirements for individual minerals. The substances included are mainly non-metallic industrial minerals, especially those often used as fine powders, the preparation of the diagrams having been sponsored originally by the powder technology group of the German Engineers' Association. They comprise agate, alumina or corundum, asbestos, baryte and witherite, bentonite, calcite and aragonite, calcium montmorillonite, diamond, diatomite, dolomite, feldspar, fluorite, garnet, gypsum and anhydrite, igneous rocks, iron oxides, kaolin, lithium minerals, mica, monazite and bastnäsite, olivine and serpentine, palygorskite, peat, quartz, sepiolite, slate, talc, titanium dioxide, tobermorite, vermiculite, and zircon.

Being diagrams made entirely of words and chemical formulae they summarize a great deal of information, rather like paragraph headings, some well-known or self-explanatory, but others will prompt further inquiry, especially as space has not permitted the inclusion of precise data on properties, availability, and prices, the factors that really determine the uses of minerals. The uses indicated are those of synthetic as well as natural minerals, and thus there is an unexpected diagram for tobermorite, based, one supposes, on limestone and sand, and the diagram for titanium dioxide, specified as anatase and rutile, does not indicate that these are largely prepared from ilmenite, a major industrial mineral that is not mentioned. The baryte–witherite diagram might suggest that witherite is the principal mineral raw material, which is certainly not the case. As the author has incorporated all the uses he knows, important and trivial, direct and indirect, the general effect is to suggest an endless variety of uses and possible uses that engineers and salesmen may hope to exploit. T. D.