the hardness of a mineral, the operator should place a piece of glass flat upon a table, and then draw the mineral sharply across it—taking care to see previously that particles of quartz or pyrites are not present in the substance.

5. Minerals which fuse with extreme difficulty, or only become vitrified and rounded on the thinnest edges, are placed in these Tables (in order to avoid risk of error) under both the fusible and infusible groups of the section to which they belong. In trying the fusibility of a mineral, beginners should be careful to operate only on thin and sharply-pointed splinters; not on comparatively broad and thick-edged fragments. (See the author's BLOWPIPE PRACTICE, pages 8, 9.)

6. As an additional guide to determination, the essential components of the various minerals included in the Tables are briefly indicated; but where percentages are given, these, for simplicity, are stated as a rule in whole numbers only.

7. As this little handbook is intended to be used by students almost at the beginning of their mineralogical studies, all crystallographic references (beyond a few bare indications) have been purposely excluded from the Tables. A synopsis of the crystallization characters of the more important mineral species will be found in the Notes attached to the Determinative Tables of the author's BLOWPIPE PRACTICE, page 102 to page 298. In these Notes, also, the spectroscopic characters of minerals are fully given—a feature not found in other works.

8. The following works on Determinative Mineralogy should also be consulted by more advanced students:—(1) Tafeln zur Bestimmung der Mineralien, by the late Professor von Kobell, of Munich, (12th ed. by K. Oebbeke, 1884). (2) The American edition of von Kobell's "Tafeln," re-arranged and amplified by Professor George J. Brush. And (3) the Anleitung zum Bestimmen der Mineralien, by Dr. Fuchs, of Heidelberg.