USES.

Though one of the most important uses of graphite is for the manufacture of refractory articles, there is very little used in Canada for this purpose. In the manufacturing of crucibles, retorts, etc., flake graphite of a number of sizes is used. It should be of slow combustion and good thermal conductivity; but the amount, and chemical composition of the contained impurities are the main factors in determining the suitability of any graphite to this purpose. The presence of fluxing impurities would tend to shorten the life of the finished article, if not render it unfit for use.

Stove polishes consist essentially of finely ground graphite, usually 160 mesh, with which is mixed clay or some other material to act as a bond. Both the flake and amorphous varieties are used. Professor B. L. Miller says:[1] "If flake graphite is used a higher lustre is obtained which has a decidedly steel grey colour. This is owing to the flattening out of the flakes on the metal surface when rubbed by the brush, and to the fact that light reflected from the surface of the flakes produces a higher lustre than when the amorphous graphite is used. Not infrequently both amorphous and crystalline flake graphite are mixed together to produce the desired results. With the amorphous graphite alone it is difficult to obtain a lustrous polish, while the crystalline flakes alone produce too light a colour, but the combination of the two varieties will yield a black polished surface with expenditure of little labour. The polish obtained with the flake graphite alone, or with the mixture of the two, lasts longer than the polish obtained with amorphous graphite alone." For polish making purity is not of importance, from 70 per cent to 80 per cent of carbon being usual.

The finishing step of the manufacture of gunpowder consists of polishing the grains with graphite. The powder is placed in a tumbling barrel with very fine flake graphite and thoroughly mixed and shaken for some time. The thin film of

[1] "Graphite Deposits of Pennsylvania," Topographic and Geologic Survey of Pennsylvania, Report No. 6, 1912.