Analyses of "Dressed graphite."

Colour of the ash, light reddish-brown. A portion placed upon moist turmeric paper manifested an alkaline reaction. The ash contained mica.

A portion of this graphite was digested with hydrochloric acid, which removed a considerable quantity of iron, alumina, lime and magnesia, a little silica, and traces of manganese. No other constituents were sought for.

The residual graphite having been carefully washed and dried at 100° C., was found to contain :

Ash per cent..... ..... 6·690

Colour of the ash, white, with a faint reddish tinge. It contained some mica.

An analysis of this ash gave 79·972 per cent. silica. The constituents of the remaining portion, the principal of which appeared to be alumina, lime and magnesia, were not estimated.

On the further purification of "Dressed graphite."

All the foregoing samples of "dressed graphite" contained more or less carbonate of lime and oxide of iron, the presence of which in any graphite, intended for the manufacture of crucibles, is very objectionable. Now, not only are these readily removed by digestion of the graphite with hydrochloric acid, but, as will be seen, so also were other constituents of the foreign mineral matter, so that—taking this particular instance—the graphite, which before treatment contained 13·15 per cent. ash, after treatment was found to contain only 6.69 per cent., a difference of 6·46 per cent. And furthermore, the nature of the ash of the graphite, which had undergone the hydrochloric acid treatment, consisting, as it did, for the greater part, of silica—that is to say, of the 6·69 per cent. ash 5·35 consisted of silica, the balance of 1·34 being composed of alumina, lime, magnesia, etc.,—was such as to warrant the assumption that it would in no wise be prejudicial to the application of the purified graphite for the manufacture of crucibles.

The two following samples of "dressed graphite" were prepared by the Canada Plumbago Company, at present the Montreal Plumbago Mining Company. The material operated on was taken from the bed of "disseminated graphite" occurring on the twenty-eighth lot of the sixth range of Buckingham. The results of the analysis of what was regarded as a very fair average sample of this bed, will be found given under analysis 1.