

at the Paxton mine in Lutterworth, or a closer grained magnetite carrying a certain amount of pyrites, as is seen in the Snowdon occurrences, to a compact crystalline ore containing more or less titanium, such as is found at Pine Lake and other places.

In all cases the analyses of the picked specimens were practically the same, about 60 % metallic iron, and practically free from phosphorus, sulphur and titanium.

The average samples of ores from the Snowdon properties, which would represent the character of the Victoria, Miles, Ledyard and Howland, is the following :

Silica . . . . .	21.20
Oxides of Iron . . . . .	66.28
Alumina . . . . .	3.70
Lime . . . . .	5.04
Magnesia . . . . .	2.19
Sulphur . . . . .	1.64
Phosphorus . . . . .	.02
Titanium . . . . .	.00
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	100.07

Metallic Iron . . . . . 48.00

These would require thorough calcining to remove the sulphur. At the Howland mine it was calcined very roughly in large pieces in heaps of 100 tons, but as samples of the calcined ore which I obtained shewed the same amount of sulphur as the raw ore, the present system of calcining is practically useless.

Average ore from the Paxton mine in Lutterworth analysed :

Oxides of Iron . . . . .	67.77
Silica . . . . .	19.30
Alumina . . . . .	6.24
Lime . . . . .	3.81
Magnesia . . . . .	3.38
Sulphur . . . . .	.03
Phosphorus . . . . .	None.
Titanium . . . . .	.15
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	100.68

Metallic Iron . . . . . 48.64

This ore has the decided advantage of being so free from sulphur that it would not require calcining.

The third class of samples I collected and mentioned as taken from the dump, shewed that waste ore contained over 30 % metallic iron.