

in a course of private experiments, instituted by the English Government, a variety of scrap-iron plates of the best quality were shattered by a 230 lb. shot, from an Armstrong gun, while plates manufactured from the Woodstock iron, were only indented in a slight degree. Six different trials were made, with the same result.

Mr. Best writes me that the iron has been used by the largest Armor Plate Maker in England, with entire success, and that it has given the greatest satisfaction. Some fine boiler plates, in the manufacture of which a portion of this was used, resisted a tension of twenty-three tons to the inch. He ascribes its superiority to the manner in which the ore is treated during the process of smelting, which gives it a more than ordinary amount of carbon, and to its great density, which of course gives it an extra resisting power. The metal, when cast, is a fine fibrous silver-gray iron, singularly close-grained, and ringing, when struck, very much like steel. I have already said that a mixture of two ores is employed in its manufacture, the one being a haematite, the other a hydrous peroxide, or limonite. According to Mr. Goodale, two hundred pounds of one of these ores is usually reduced in a charge with 1.150 of the other. According to the same authority, the following are the proportions of iron-ore, fuel and lime:—

3 barrows of ore, 450 lbs. each, 1,350 pounds.

20 bushels of charcoal.

70 pounds of limestone.

The metal is cast into pigs of 90 lbs. each.

The proprietors believe the iron thus wrought to be superior to Swedish, Russian, and East Indian Pig Iron, and draw their conclusion from the fact, that one cubic inch of the Woodstock metal will weigh, at least, 22 per cent. more than either of the above, and is something like 26 per cent. heavier than most of the "Scotch brands."

The following is an analysis of the ore made by the Company, being considered as an average of all the specimens examined:—

Peroxide of Iron,	...	...	...	...	...	39.285
Protoxide "	...	...	...	...	...	1.140
Alumina,	...	...	...	...	...	3.116
Oxide of Manganese,	...	...	...	...	...	5.872
Lime,	...	...	...	...	...	1.120
Magnesia,	...	...	...	...	...	4.602
Potash,	...	...	...	...	...	.762
Soda,	...	...	...	...	...	.512
Sulphuric Acid,	...	...	...	...	...	1.274
Phosphoric "	...	...	...	...	...	1.389
Silica,	...	...	...	...	...	25.964
Carbonic Acid and Water,	...	...	...	...	...	14.964

100.000

Metallic Iron, ... .. 28.377

Some specimens have been found to contain a greater, some a less percentage than the above, but the analysis now given may be considered as a