On the use of chlorine in destroying fire-damp

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LII. *Intelligence and Miscellaneous Articles.*

DUTY OF STEAM-ENGINES.

A REMARKABLE improvement in the duty of steam-engines has of late taken place in two instances on mines in Cornwall, which appears from the printed accounts which record the work performed monthly by the engines at all the principal concerns. Hitherto the best have reached only to 40 millions of pounds of water lifted one foot high by each bushel of coal consumed ; some have indeed occasionally done more, but not to any extent or continuance.

The improvement which we now notice is in two engines erected by Capt. Samuel Grose, and the only ones as we believe which he has yet constructed. We are not acquainted with the exact nature of the difference between these and other engines usually employed ; but we believe there is nothing altered of importance in the general principle, but rather in smaller details in matters which have been hitherto overlooked.

Whatever it may be, however, it is not less creditable to the engineer, and is particularly worthy of praise, as not having been attended, as we are told, with additional complication or expense.

The first engine in which this improvement appeared was one erected at Wheal Hope, of 60-inch cylinder, working single as usual.

The duty reported, is in April	42,101,739 lbs.
May	42,241,650
June	54,725,716
July	55,012,292
August	50,979,084

These results are, however, much exceeded by the engine afterwards built by Capt. Grose, at Wheal Towan, of 80-inch cylinder, where the duty done has been

April	61,877,545
May	60,632,179
June	61,762,210
July	62,220,820
August	61,764,166

Thus exceeding by nearly 50 per cent what had hitherto been attained.—We should be very glad to be able to lay before our readers some good account of the particulars of this great improvement, which we hear is in progress of being applied to other large engines in the same district.

ON THE USE OF CHLORINE IN DESTROYING FIRE-DAMP.

To the Editors of the Philosophical Magazine and Annals.

Gentlemen,

West Bromwich, Sept. 20, 1827.

In your Number for August, (which I have only received within a few days,) I observe a notice of a paper (communicated by Mr. Children)

Children) to the Royal Society, "On destroying the fire-damp in mines by chloride of lime, by F. Fincham, Esq."

It is a somewhat remarkable coincidence that I had recommended the use of chlorine for the same purpose in January last; and although I have some doubt as to its practicability, I am now pursuing a series of experiments in a colliery at West Bromwich, in the hope of removing the objections against the use of chlorine, which have hitherto prevented its adoption.

If my experiments prove successful, I will take an early opportunity of forwarding you an account of them.

I am, &c.

JOHN WOOLRICH.

MINERAL WATERS OF BILIN.

The following are the contents of these springs, according to Professor Steinmann:

	<i>Joseph's-Well. Caroline's-Well.</i>	
	In 10,000 parts.	
Sulphate of lime	2·462	2·127
Ditto of soda	7·212	6·943
Muriate of soda	3·811	3·303
Carbonate of soda	31·182	23·411
Ditto of lithia	0·114	0·105
Ditto of strontia	0·018	0·018
Ditto of lime	3·053	3·801
Ditto of magnesia	2·573	2·010
Ditto of protoxide of iron	0·064	0·071
Ditto of protoxide of manganese....	0·015	
Subphosphate of alumina	0·019	
Phosphate of lime	0·007	
Silica	0·505	0·549
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Solid contents	51·040	42·338
Carbonic acid gas	23·620	22·317
Atmospheric air	0·153	0·108
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	74·813	64·763

Schweigger's Jahrbuch der Chemie, &c. N.R. Band xviii. p. 184.

ANALYSIS OF ALLOPHANE.

Dr. Walchner has recently analysed this mineral, from Gersbach, in Schwarzwalde, having a specific gravity of 1·8, with the following results:

Silica	24·109
Alumina	38·763
Oxide of copper	2·328
Water	35·754

100·954

Ib. Band xix. p. 154.