

In Table I are given the results of the experiments :

I.	II.	III.
No. of Ex.	Mols. KOH to one mol. ZnSO ₄ .	Per cent. ZnO in precipitate.
1	0.25	17.11
2	0.50	35.10
3	1.00	68.08
4	1.62	100.00
5	2.00	98.49
6	3.00	96.79
7	5.00	89.76
8	7.00	68.87
9	13.20	0.00

If these data be plotted in a curve, the axis of abscissae being the number of molecules of potassium hydroxide to one molecule of anhydrous zinc sulphate, and the axis of ordinates being the per cent. of zinc oxide in the precipitate, it is seen that the curve at first ascends almost in a straight line to ordinate = 100, and abscissa = 1.62 (the point of complete precipitation), and then falls to ordinate = 0, and abscissa = 13.2 (the point of re-solution) in a perfectly regular manner.

CHEMICAL BRICK FOR GLOVER TOWERS.

BY IRVING A. BACHMAN.

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IN the last year, Chemical Brick for Glover Towers, from a new locality,¹ have been placed upon the market, which in physical appearance and color are like the famous Blue Welch Brick, and in quality rival them.

Specific gravity, 1.93. Hardness, 7.5.

Color, umber blue. Fracture, blue.

Silica,	SiO ₂	72.11 per cent.
Alumina,	Al ₂ O ₃	20.58 "
Iron oxide,	Fe ₂ O ₃	5.48 "
Calcium oxide,	CaO.....	0.92 "
Magnesium oxide,	MgO.....	0.54 "

A whole brick placed in the bottom of working Glover Tower, acid at 62° B. and 310° F., lost as follows :

¹ Manufactured from the Aiken, S. C., clays.

Weight of brick.....	2934.22	grams.
“ “ “ at expiration of 1 week.....	2933.01	“
“ “ “ “ “ “ 2 weeks.....	2931.92	“
“ “ “ “ “ “ 3 “	2929.41	“
“ “ “ “ “ “ 4 “	2928.36	“
“ “ “ “ “ “ 5 “	2927.11	“
“ “ “ “ “ “ 6 “	2925.26	“
“ “ “ “ “ “ 7 “	2923.99	“
“ “ “ “ “ “ 8 “	2922.78	“
“ “ “ “ “ “ 9 “	2921.53	“
“ “ “ “ “ “ 10 “	2920.05	“

Whole brick immersed in boiling

	66° B.	sulphuric acid,	5 hours,	lost 0.08	per cent.
Same reweighed “	60° B.	“	“ 5 “	“	0.07 “
“ “ “	50° B.	“	“ 5 “	“	0.06 “
“ “ “	47° B.	“	“ 10 “	“	0.06 “

A piece from interior of brick immersed in boiling

	66° B.	sulphuric acid,	5 hours,	lost 0.15	per cent.
Same reweighed “	50° B.	“	“ 5 “	“	0.07 “
“ “ “	50° B.	“	“ 5 “	“	0.07 “
“ “ “	47° B.	“	“ 5 “	“	0.04 “

The edges still remained firm and sharp.

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THE CONTRIBUTIONS OF CHEMISTRY TO THE METHODS OF PREVENTING AND EXTINGUISHING CONFLAGRATION.

BY THOMAS H. NORTON.

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At about this period several processes were introduced for the preservation of wood against decay; and claims were made that these were also valuable for rendering wood unflammable.¹ These processes consisted essentially in the introduction into the pores of wood of metallic salts in solution, which combined with the nitrogenous matter present to form insoluble, non-fermentable compounds, and therefore removed sources of decay.

The chief methods employed were kyanizing or impregnation with mercuric chloride; burnettizing or impregnation with zinc chloride, using a three per cent. solution; boucherizing or injection of copper sulphate, using a one per cent. solution; and

¹ Rymer-Jones, *Ecl. Eng. Mag.*, 33, 55, 1885.