

for, it is probable that the whole of the iron, except the small portion of peroxyd which colors the rock, exists in the state of carbonate. In the following analyses, therefore, the lime and the iron, as well as a little magnesia, are calculated as carbonates. XIII is the result obtained with four grams of the reddish portion of the phonolite, as free as possible from the green; and XIV was obtained with two and a half grams of a mixture of the two colors.

	XIII.	XIV.
Soluble silicate, zeolite (A), by difference.	46.57	36.16
Insoluble silicate, feldspar (B).....	45.75	55.40
Carbonate of lime.....	3.63	4.36
" iron.....	3.52	3.72
" magnesia.....	.53	.36
	<hr/> 100.00	<hr/> 100.00

In order to fix the composition of the soluble silicate, the amounts of the insoluble residue and of the separated silica, alumina, and alkalis, having been carefully determined, and the lime, magnesia, and oxyd of iron calculated as carbonates, the water was estimated by the loss. In this way were obtained the results given under XIII A, and XIV A; while the analyses of the insoluble silicate, which is a potash feldspar, are given under XIII B, and XIV B.

	XIII A.	XIV A.	Natrolite.	Analcime.
Silica.....	51.96	51.66	47.40	54.06
Alumina.....	24.42	24.38	26.09	23.20
Soda.....	12.93	13.05	16.02	14.10
Potash.....	1.15	1.28
Water.....	9.54	9.13	9.05	8.10
	<hr/> 100.00	<hr/> 100.00	<hr/> 100.00	<hr/> 100.00

The composition of this zeolitic mineral is intermediate between analcime and natrolite; but the readiness with which it gelatinizes with acids, leads to the conclusion that it belongs, in great part at least, to natrolite. The theoretical composition of these two zeolites is for the sake of comparison, placed alongside of the two analyses of the soluble portion of the phonolite.

	XIII B.	XIV B.
Silica.....	59.70	60.90
Alumina.....	23.25	24.45
Lime.....	.99	.45
Potash.....	9.16	undet.
Soda.....	2.97	"
Volatile.....	2.23	2.10
	<hr/> 98.30	<hr/>