

The results of the (rough) *proximate* analyses were as follows:—  
Found in 100 parts of

	Real Pumice.	Quasi-Pumice.
Moisture (100°), . . . . .	1.0	18.5
Part decomposable by hot hydrochloric acid, <sup>1</sup> . . . . .	6.9	34.0
Part decomposable by hot vitriol, . . . . .	5.1	44.5
Ultimate residue, . . . . .	87.0	8.0
	100.0	100.0

The ultimate residues were ignited before being weighed and they were analysed in that condition, which, as it now strikes me, may perhaps have been a mistake; but if so it cannot now be rectified. The results of the analyses were as follows:—

Found in 100 parts of *purified*

	Pumice.	Quasi-Pumice.
Silica, . . . . .	76.41	56.77
Alumina (including trace of Fe <sub>2</sub> O <sub>3</sub> ), . . . . .	15.53	25.21
Lime, . . . . .	2.11	9.09
Magnesia, . . . . .	0.40	1.37
Potash, . . . . .	2.26	3.36
Soda, . . . . .	2.98	4.19
Moisture, <sup>2</sup> . . . . .	0.20	1.11
	99.89	101.10

Converting these numbers into multiples of SiO<sub>2</sub>, Al<sub>2</sub>O<sub>3</sub>, &c., we have for the

	Real Pumice.	Quasi.
SiO <sub>2</sub> , . . . . .	1	1
Al <sub>2</sub> O <sub>3</sub> , . . . . .	0.1186	0.2592
(or $\frac{1}{2}$ Al <sub>2</sub> O <sub>3</sub> ), . . . . .	(0.3558)	(0.7776)
CaO, . . . . .	0.0296	0.1716
MgO, . . . . .	0.0079	0.0362
K <sub>2</sub> O, . . . . .	0.0189	0.0378
Na <sub>2</sub> O, . . . . .	0.0377	0.0714

or, taking RO as a general symbol for R''O,  $\frac{1}{2}$ Al<sub>2</sub>O<sub>3</sub>, R'<sub>2</sub>O, we have in multiples of

	SiO <sub>2</sub>	RO
Real Pumice, . . . . .	1	0.4499
Quasi, . . . . .	1	1.0946

or, separating the bases into R<sub>2</sub>O<sub>3</sub>'s and RO's (where RO = CaO, K<sub>2</sub>O, &c.)

	SiO <sub>2</sub>	R <sub>2</sub> O <sub>3</sub>	RO
Real Pumice, . . . . .	10	1.19	1 (-0.06)
Quasi, . . . . .	4	1.037	1.27

Rammesberg, in his Dictionary of Chemical Mineralogy (quoting from an extensive research by Abich) gives a number of analyses by that chemist, from which it appears that pumices and obsidians (which, with him, are only two forms of the same genus) arrange themselves into two sets—A and B.

The	(SiO <sub>2</sub> )s	(R <sub>2</sub> O <sub>3</sub> )s	(RO)s
in A are, . . . . .	4.5 to 5.5	1	1
in B are, . . . . .	6.5 to 8.5	1	1
Orthoclase and albite, . . . . .	6	1	1
General symbols, . . . . .	n	m	p

<sup>1</sup> By difference; includes combined H<sub>2</sub>O.

<sup>2</sup> Absorbed during preservation in tubes.