igneous or aqueo-igneous to form them, than the traps or the lavas. Hence the latter might be produced in such a state of a menstruum as would not produce granite, even though all the essential ingredients were present. And that state of the menstruum in which granite would form, might prevent that play of affinities requisite to produce the trappean and volcanic products. In this way we might show, both how all the varieties of unstratified rocks might be produced from the same fluid mass, and how one period might be more favorable to the formation of the granites, another to the traps, and another to the lavas. Still we incline to the opinion that in very many instances the varieties of unstratified rocks have resulted from the metamorphism of different kinds of stratified rocks.

TABLE OF THE COMPOSITION OF ROCKS.

Rocks	Silica.	Alumina.	Protoxide of Iron.	Peroxide of Iron.	Oxide of Manganese.	Lime.	Magnesia.	Potash.	Soda.	Organic Matter.	Water.	Sulphuric Acid.	Carbonic Acid.	Specific Gravity.
Clay	62.8	25.5		1.25		0.36	0.47	2.51			6.65			
Shale	61.9	21.7	4.73			0.09	0.59	3.16	0.25	0.70	6.73			
Clay Slate	67.4	18.2	4.71	1.02	0.30		4.0	2.65			1.74			2.8
Gypsum						32.6					20.9	46.5		2.8
Chalk and Oolite						56.1							4.3	2.5
Dolomite						52*	45*							2.7
Hydraulic Limestone	15.4	9.1		2.25		25.5	12.4						34.2	
Silurian Limestone	10.3	12.2				35.3*	42.2*							
Winooski Marble														
Carrara Limestone	99.3		0.25				0.28*							2.70
Sandstone (Quader)	98.6	0.08		0.44	0.08	0.02		trace	trace		0.83			2.67
Greensand (N. Jersey)	49.3	7.71	24.7			5 08		10.0			6.00			2.55
Gray Wacke	87.0	6.4		4.7		0.19	0.87	0.53	0.34		0.37			2.67
Mica Schist	55 1	12.6		16.9			11.0	2.2	1.24		2.13			2.69
Talcose Schist	57.8	7.06		9.45			25.6							
	69.9	20.0				1.51	1.80	1.45	3.33		2.40			2.7
Chlorite Schist	31.5	5.44		:0.1			41.5				9.32			
Hornblende Schist	48.6	16.4	4.69	18.6	0.48	7.16	2.32	0.50	0.89		0.21			2.72
Gneiss	71.	15.2												2.58
Serpentine	38.7	30.6	12.8		0.9	4.51	30.0	0.29	0.11		9.17			2.74
Granite	67 3	16.1		1.9		0.6		13.3			0.8			2.74
Syenite	70 0	12.4	1.51	0.17		3.45	3.46	3.13	3.44		0.56			2.62
Feldspar Porphyry	70.5	18.5		5.5		0.25	0.40	5.50	3.55		0.77			2.85
Greenstone, or Diorite	60.0	12.3		12.3	3.1	1.4		9.6	1.1		0.2			
Melaphyr	53.2	19.8	8.56		0.51	3.87	4.96		7.02		2.14			
Basalt or Dolerite	48.5	30.2				11 9	6.9	0.65	1.96					2 86
Trachyte	76 7	14.2				1.44	0.28	3.20	4.18					2.68
Lava, *top of* Mt. Ararat	69 5	15.0	3.35			4.7	0.98	1.46	4.46		0.35			2.60
			Prot. & per											
Lava, Trachytic	57.8	17.6	2.09	4.64	0.82	5.46	2.76	1.42	6.82					2.75
Obsidian, Ararat	77 8	11 8		2.35		1.31		2.44	4.15		0.51			2.36

* Carbonate of Lime and Magnesia.