

THE CHEMICAL COMPOSITION OF THE MAGMA.

The chemical mean of the three intrusions at Shefford is practically identical with the composition of the laurvikose, while the order of intrusion is: 1st, the most basic differentiate, essexite akerose; 2nd, the acid extreme, nordmarkite nordmarkose; and 3rd, the pulaskite (laurvikose) of intermediate composition.

A comparison of the following tables of analyses of rocks from Shefford mountain shows the Brome specimens to have lower ratios of silica but higher of alumina and lime.

	II Essexite (akerose).	IX Nordmarkite (nordmarkose)	X Pulaskite (laurvikose).	XIV Mean of II, IX and X.	XV Brome mtn.	XVI Mean of Shefford and Brome.
SiO ₂ . . .	53.15	65.43	59.96	59.51	54.25	55.47
Al ₂ O ₃ . . .	17.64	16.96	19.12	17.90	22.14	21.17
Fe ₂ O ₃ . . .	3.10	1.55	1.85	2.17	2.03	2.07
FeO	4.65	1.53	1.73	2.64	2.66	2.66
MgO	2.94	.22	.65	1.27	1.48	1.44
CaO	5.66	1.36	2.24	3.00	6.77	5.93
Na ₂ O	5.06	5.95	6.98	5.98	4.95	5.19
K ₂ O	3.10	5.36	4.91	4.46	3.23	3.52
CO ₂	.39	—	—	.13	—	—
TiO ₂	1.52	.16	.66	.78	1.23	1.13
P ₂ O ₅	.65	.02	.14	.27	.17	.12
SO ₃	.28	.06	.08	.14	—	—
Cl	.07	.04	.14	.08	—	—
MnO	.46	.40	.49	.45	.12	.20
BaO	.13	—	.12	.08	—	—
H ₂ O	1.10	.82	1.10	1.00	.98	.99
	99.84	99.86	100.17	99.95	100.01	99.89

The akerose and nordmarkose areas of Shefford Mountain are practically equal in extent, and while the laurvikose is much smaller than these, its composition is virtually the mean between the akerose and nordmarkose. Therefore the calculated analysis XIII may be safely taken as representing the average composition of the Shefford mass, as indicated by the section afforded by the present surface.

A rock of the composition of the mean of Shefford would be classed as follows in the quantitative classification:—

Class	II.	Dosalane.
Order	5	Germanare.
Rang	3	Andase.
Subrang	4	Andose.

It stands nearly on the line between persalane and dosalane, the ratio of the salic to the femic minerals being as 85.33: 12.40.