Prof. How on the Mineralogy of Nova Scotia.

Of the various modes in which the constituents of the mineral may be arranged, I prefer the following, and therefore, using the notation employed in mineralogy, propose the formula

$2 \text{CaO SiO}^2 + 2(\text{CaO 2 BO}^3, \text{HO}) + \text{BO}^3, 3 \text{HO}$

as that of the new mineral to which I give the name silicoborocalcite, chosen as companion to that of natroboroealcite, the essential chemical difference between minerals found in the same region, and even, as will presently appear, in the same matrix, occasionally being clearly indicated by these appellations: the formula of the latter, according to my own results, when rewritten so as to include some grouping seen above, is

$NaO 2 BO^3$, $10 HO + 2 (CaO BO^3, HO) + BO^3, 3 HO$.

For comparison's sake, I add the formula of cryptomorphite (the other borate found in gypsum here), also rewritten,

$NaO 2BO^{3}, 6HO + 3(CaO 2BO^{3}, HO) + BO^{3}, 3HO,$

so that relations can be traced between these geologically allied minerals.

The constituents of silicoborocalcite are those of datholite, the only other known hydrated silicated borate of calcium, for which Berzelius gave the formula

$CaO BO^3 + CaO 2 SiO^2 + HO$,

an expression exhibiting proportions very unlike those shown above to exist in the new mineral. In datholite, as in all silicated borates, the boracic acid is sometimes held to be basie*. On this view, excluding water,

In datholite the ratio of O in SiO^2 to that in the bases is 4:5In silicoborocalcite ,, ,, ,, 4:19

The ratio of the same to that in all the constituents is in the former 2:3, in the latter 2:12; the relations thus brought out in silicoborocalcite are so unlike those in any known compound, that silica cannot be the only acid present. The formula I have proposed contains two of Wollastonite, two of normal hydrated biborate of calcium, and one of Sassolin. While datholite and silicoborocalcite are quantitatively unlike and physically different on comparing the ordinary crystallized specimens of the former with the nodules of the latter above described, there is a remarkable resemblance between these and the exceptional state in which Whitney found datholite in a greenish magnesian silicate near Lake Superior. I refer to the perfectly white and opake nodules looking like the finest marble, or some kinds of Wedgewood

* Dana's 'Mineralogy,' 4th edit., vol. i. p. 207, and vol. ii. p. 335.

4

14