No. I. to warrant the conclusion that the mineral is constant in composition. They are as follows:

II.

Carbonic acid	30.72
Alumina with traces of Fe_2O_3	32.68
Lime	5.65
Magnesia	0.45
Soda	20.17
Water	[10.32]
	100.00

In this analysis the total alkaline chlorides are calculated as soda, the amount of potash not having been determined.

In No. 1 the excess of carbonic acid above that required to form neutral carbonates with the bases other than alumina is 10.69; while in II. it is 11.46. This excess must either be in combination with the alumina, or else must go towards forming bicarbonates with a portion of the protoxide bases. If the alumina is not present as carbonate, we might then suppose it to exist as hydrate. There is, however, not sufficient water to form trihydrate, the compound known in nature as Gibbsite, and too much to form the monohydrate or diaspore. Native trihydrate, moreover, is only soluble in acids with difficulty, and diaspore is insoluble, unless after ignition.

The amount of water is about that which would be required to form dihydrate,—a hydrate which, as prepared in the laboratory, is soluble in acetic acid, though insoluble in the stronger acids. But hydrochloric, or nitric acid, readily dissolves all the alumina in the Dawsonite.

The crystalline character of the mineral, and the uniformity of its optical and chemical characters, forbid its being regarded as a mechanical mixture; and, for the present, we can only say that it may be a hydrous carbonate of alumina, lime and soda, or perhaps a compound consisting of a hydrate of alumina combined with carbonates of lime and soda.*

If we adopt the former view, and consider that alumina may exist in combination with carbonic acid, we need no longer consider Hovite as a bicarbonate of lime, but may adopt the suggestion of the Messrs. Gladstone, that it is a double carbonate of alumina and lime.

* There is nearly enough carbonic acid to form neutral carbonate with the lime, and bicarbonate with the soda.