1864.] T. STERRY HUNT ON LITHOLOGY.

The feldspars of the above trachytes and phonolite offer some considerable variations in their composition, especially in the proportions of the alkalies. In 1x the proportions of potash and soda are nearly the same as in' the trachytes of Brome, Shefford, and Chambly; and the same is true of XII. These are doubtless to be regarded as varieties of orthoclase with a large amount of soda, while in the feldspar from the phonolite the proportion of soda is very small. In x, on the contrary, the large predominance of soda indicates a composition approaching that of albite. It is further apparent, from a comparison of the feldspars of the other trachytes whose complete analyses are not given, that the proportions of the alkalies are liable to considerable variation, even in adjacent and apparently similar dykes. All of the above feldspars are probably to be referred to orthoclase, or to albite; but these, in the earthy trachytes, have undergone a commencement of decomposition ; which consists in the loss of a portion of silica and alkali. and the combination of water, resulting in a formation of kaolin. An admixture of this substance will explain the increased amount of alumina, the deficiency of silica, and the presence of water in the feldspars of the more earthy of these trachytes.

These trachytic dykes are not confined to the vicinity of Mont-To the southward, on the shores of Lake Champlain, there real. is found in and about Burlington, Vermont, a vast number of dykes of intrusive rock; some of which appear to intersect the strata of the Quebec group, and others those of the Trenton group. Some of these are described as being of greenstone; and others, as a white or yellowish-white feldspathic rock, often porphyritic from the presence of feldspar crystals. The base of a yellowishgray porphyritic dyke from Shelburne, having a rough fracture, and a specific gravity of 2.60, gave to Prof. G. F. Barker, silica 67.30, alumina and peroxyd of iron 19.10, lime 0.79, magnesia, traces, potash 4.74, soda 6.04, volatile 1.70,= 99.67. It contained a little intermingled quartz; and the mass resulting from the fusion of the rock with an alkaline carbonate, afforded traces of a sulphuret. (Geology of Vermont, pages 579-707.)

Somewhat to the south of Burlington, on the west side of Lake Champlain, and near to Essex, there is a great mass of intrusive rock, found in the slates of the Hudson River formation. As described by Emmons, it is interstratified in an irregular manner among the layers of the unaltered sedimentary rocks, and has a