tively flat, though no such striking instance has been met with as Adams has described in Canada.[1] The general foliation strike in the Adirondacks is n.e. and s.w., and the usual dip is to the east, though there are many exceptions to both rules. In some districts there is evidence of considerable folding of the bedding and foliation planes but it is seldom sharp, and intricate folding and plication occur seldom, if ever. Van Hise has suggested that the development of foliation parallel to bedding may have been initiated by vertical shortening and horizontal elongation below the level of no strain, or of no lateral stress, and that in subsequent compression and folding the varying strength of the different beds controlled the movement and kept it in the same planes.[2] This is an ingenious and very plausible suggestion, the likelihood of which is emphasized by the many evidences of the deep seated character of the metamorphism. But the uniformity of direction of foliation in both sedimentary and igneous rocks shows that the metamorphism which produced it followed the appearance of the igneous rocks, and that it must have been produced in both at the same time.

Late Precambric igneous rocks. Dikes of two sharply contrasted sorts of rocks are of frequent occurrence in parts of the Adirondack region, cutting all of the rocks so far described. They are of all widths up to over 100 feet, though those wider than 30 or 40 feet are exceptional, and few reach those dimensions. The larger number have an approximate east and west trend and are nearly vertical. The more common dikes are of a black, flinty, basic rock, diabase; the others are more variable, but are usually quite acid, red, porphyritic rocks of syenitic make-up.

They are much more abundant in the northeast than in any other part of the region, being exceedingly numerous in Clinton county and northern Essex, so much so that, if massed together, it would be at once evident that they constitute a very respectably large portion of the whole rock mass. Somewhat less than half of Clinton county has Precambric surface rocks, yet some 130 of these dikes are known in the county and there are doubtless many more. Rand hill, Dannemora mountain and

[1] *Op. cit.* p.11J-12J.

[2] U. S. Geol. Sur. 16th An. Rep't, pt. 1, p.773.