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NOTES ON SOME DIABASE DYKES OF THE RAINY LAKE REGION.

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The most recent of the crystalline rocks of the Rainy Lake region are comprised in a series of strong dykes of comparatively fresh diabase which are observed to cut, at different localities, the various members of the Archæan complex of formations. These dykes are not infrequent throughout the country lying between the eastern confines of the first prairie steppe, which forms the basin of the Red River of the north, and the western border of the area of Animikie and later formations of the Lake Superior basin. Their occurrence and some of their characters are briefly referred to in my report on the Lake of the Woods region.* As there observed, the occurrence of these dykes cutting the older folded rocks, which in their eastward geographical continuation, pass under the flat-lying Animikie and Keweenawan formations, is suggestive of their possible connection with the bedded traps that form so large a part of the two latter geological series. With the question of the possible identity of character and age of these dykes with the traps of the Animikie or Keweenawan, or of both, is associated the equally interesting one of the extent of the earth's surface, over which, in early geological times, were in simultaneous operation, those particular volcanic forces which appear to have had their focus in the Lake Superior basin.

The more notable field characters of these dykes are : their common strike throughout the region from N.W. and S.E. to N.N.W and S.S.E. ; the sharp, well defined nature of the gash or fissure which they fill, no matter what may be the character of the country rock ; the absence of inclusions of the country rock, or of apophyses of the dyke running into it, except in very occasional instances ; their generally uniform width under different conditions of occurrence in different localities, the limits being as a rule 60 and 150 feet ; their continuity for one or several miles where exposures permit them to

* Geological and Natural History Survey of Canada, Annual Report, 1885, p. 41 CC., p. 47 CC.