

Conclusions. Having considered the various ways in which the linear valleys which characterize Timiskaming region might have been formed, can a definite conclusion be inferred from the evidence cited as to the mode of origin of these striking physiographic forms? On the whole the evidence probably favours the hypothesis that the trend of the valleys has been determined by planes of faulting or deformation. The large number of the valleys and the manner in which they intersect one another, are features which are remarkably similar to those characteristic of fault planes in a region which has been subjected to faulting of a block type. Many of the dislocations in a region which had been shattered in this way, would, no doubt have very small displacements and thus the uniformity in the character of the rocks outcropping on either side of many of the linear valleys might be explained. That so few fault planes have been found may be partly accounted for by the fact that the depressions are generally filled with water or glacial drift so that the actual planes of dislocation are not generally exposed.¹

Age.

It is not possible to fix the time at which the linear valleys of Timiskaming region originated except within wide limits. They cannot possibly be of post-Glacial origin because stream dissection since the Glacial epoch has been almost insignificant and the valleys are themselves occupied by glacial drift deposited by ice-sheets. It is also very improbable that they are the result of glacial denudation, for they have no relationship to the character of the rocks they traverse, and they trend, in some cases, at right angles to the direction of ice movement. Since the valleys are neither Glacial nor post-Glacial in their origin, it follows, *a priori*, that they are pre-glacial valleys.

It is known that the linear valleys cut across the sills of Nipissing diabase which were probably intruded during the Keweenaw period so that the valleys are at least of post-Keweenaw age. Furthermore, if the linear valleys have been developed along fault planes—and the balance of evidence is probably in favour of this conclusion—the occurrence of a zone of deformation in the Palæozoic rocks on a line continuous with the west boundary of the Timiskaming depression, would indicate almost conclusively that this trench and probably the other linear valleys of the region likewise, are of post-Silurian age.

It would thus seem probable that the linear valleys were formed some time during the long interval which elapsed between the Palæozoic submergence and the coming of the continental glaciers. If a Cretaceous peneplain covered the Laurentian plateau, however, they would neces-

¹ Hobbs, W. H., Trans. Wis., Acad. Sc., vol. 15, 1905, p. 19.
Pirsson, L. V., Am. Jour. Sc., vol. 30, 1910, p. 25.