In favour of the faulting hypothesis the following evidence may cited:

The remarkable linearity of the trench valleys and the manner in which they across all varieties of rocks regardless of their character (hardness, etc.), or struct (foliation, bedding, etc.), are features, which while generally characteristic of fault pla are not normal characteristics of river valleys.

In the case of the Cobalt Lake depression, an actual fault plane has been fo to correspond with the longer axis of the basin.

The evidences of deformation in the flat-lying Palæozoic outlier at the north of lake Timiskaming, at a point in Dymond township directly in line with the w shore of the lake, suggest that the linear scarp which forms the west boundary of Timiskaming gorge has been developed along a fault plane.

Numerous faults of small displacement have been found in the mine workings Cobalt indicating that the region in that locality has been subject to faulting on extensive scale.

The manner in which some of the linear valleys lie on the contact of older younger formations lends strong support to the hypothesis that the valleys in these ca occur on a fault along which the formation on one side of the valley has been vertic displaced with respect to that on the other.

In opposition to the faulting hypothesis there is the follow evidence:

Up to the present time, the actual fault plane has been found along only one of the linear valleys of the Timiskaming region, namely Cobalt lake.[1]

From an examination of maps of areas in the Timiskaming region on which geological formations are shown in detail, it seems evident that, as regards the la part of the linear valleys, there is no apparent difference in the rocks exposed on oppo sides of the valleys, an effect that would be very noticeable, in most localities, if rocks on one side had suffered considerable vertical displacement with respect to other.

If the linear valleys of the Timiskaming region have been developed by eros along planes of faulting, it would seem probable that the Timiskaming gorge, at le the longest and deepest of all the linear valleys, would occur along a fault of gr displacement; yet the pre-Cobalt Series palæoplain occurs at approximately the sa elevation, throughout a considerable area, on both sides of the lake, showing that side of the lake has suffered little or no vertical displacement with respect to the ot

Other Possibilities. If it be assumed for the purpose investigation that the linear valleys have not developed as a res of faulting, is there any other known way in which such a striki series of linear depressions could be formed? It is pointed out the section of the report which follows that they are not of glac origin and, as far as known to the writer, such a system of draina could only develop normally by the superposition of drainage valle from an overlying series of rocks which have since been erod away, presumably, in this case, from Palæozoic sediments, since, as as known, these are the only overlying rocks which ever occurred in t region.[2] But even if the linear valleys originated on a younger Palæoz cover we have still to explain how such a system of drainage compos of linear valleys trending in three principal directions could be initiat in flat-lying sedimentary strata except by faulting or deformation.

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[1] Miller, W. G., and Knight, C. W., Eng. and Min. Jour., vol. 92, pp. 648, 1911. Williams, M. Y., Geol. Surv., Can., Mus. Bull. No. 17.

[2] Pirsson, L. V., Am. Jour. Sc., vol. 30, 1910, p. 30.