

difficult to avoid the conclusion that there has been movement along them in recent times.

The most prominent faults are those bounding the long ridge of Cobalt series that runs northward through Midlothian, Montrose, Hincks, Cleaver townships, and beyond the boundary of the map. This ridge is a graben or downfaulted block. The faults are of the hinge type. There is little or no displacement at the south end of the ridge, whereas near the northern boundary of Montrose the displacement is sufficient, on the east side, to have brought the slates of the Gowganda formation in direct contact with rhyolite. The displacement appears to decrease again toward the north, and in Cleaver township the basal boulder conglomerates are again in contact with the older rocks on the east side of the ridge. Direct evidence indicative of faulting was obtained at the point where Nighthawk creek crosses the narrow part of the ridge in the middle of Hincks township. There the strata along the water side of the ridge, which within a few chains lie almost flat, are tilted up to a dip of about 45 degrees east, with a north strike. Also on Maher lake, in the northeast corner of Midlothian township, a narrow belt of the Huronian strata are seen to be tilted up to about 35 degrees west with a strike north 5 degrees east, whereas the Cobalt series on each side are flat and undisturbed. This disturbance must be due to faulting, and as it is localized on the southward projection of the boundary of the band to the east of Sinclair lake, it would appear reasonable to consider it as the commencement of the eastern boundary fault.

There may also have been some faulting along the northern part of the smaller branch of the Cobalt series that projects through Bannockburn into Argyle township. The normal boulder conglomerate is found at the base of the ridge in contact with the greenstones, but there is no great thickness of it visible, only 30 to 50 feet, whereas on Mistinikon lake to the east and in Midlothian to the southwest the boulder conglomerate is very thick, 300 feet at least. Farther to the south, on the Bannockburn-Doon line, the slates of the Cobalt series appear to be in contact with the Kiask series. It is very possible, therefore, that there may be a downfault of the Cobalt series along this line also.

Collins has suggested that the line of Mistinikon lake is a fault, and has cited suggestive evidence in favour of this hypothesis.¹ The writer has obtained evidence strongly supporting this hypothesis, though modifying it somewhat. Mistinikon lake has been described as a zone of intense faulting in pre-Cobalt time. The evidence at hand goes to show that after the Cobalt series was deposited, further slight movement occurred along the old planes of weakness, jointing the Cobalt series so as to allow of rapid erosion along the fault planes, but without any great displacement of the rocks on either side.

The southern end of the lake was the part seen and studied by Collins. To quote from the report cited above: "The lake is a narrow, straight body whose shores rise often precipitously. The western shore is entirely Huronian, and the eastern entirely Laurentian or Keewatin. The contrast in this respect is particularly evident in a narrow ravine that extends southward from the little bay in the southeastern angle of the lake, for although the ravine is only a few chains in width at the bottom, the sides,

¹ Geol. Surv., Can., Mem. 33, 1913, p. 16.