more resistant to erosion, stand up as ridges. The areas underlain by Cobalt series are thus characterized by a predominance of valleys and ridges running north and south. The most striking ridge, whose origin is also in part due to faulting, has its south end in Midlothian township near the eastern boundary. It is broken by a depression occupied by a branch of Duncan creek near the northern boundary of the township, but rises again in southern Montrose into mount Sinclair, the most prominent hill of the district, 400 feet above the general level and 1,600 feet above sea-level. The ridge continues in a direction slightly west of north through Montrose and Hincks townships. It is notched again in the middle of Hincks township by a transverse valley followed by a branch of Nighthawk creek. Beyond, it rises once more and continues as a strong ridge through Cleaver township past the northern edge of the area examined. Another prominent synclinal ridge is that locally known as Bull or Moose mountain, in the centre of Bannockburn township. Minor examples are numerous.

The influence of the structure of the Cobalt series on the topography also extends beyond the boundaries of the areas underlain by it. The principal valleys and watercourses in the older rocks also have a general north and south trend, whereas the structure axes of the rocks cross this direction at various angles. It seems clear, therefore, that the valleys must have been established when the Cobalt series overlay the whole country, and that they were superimposed on the underlying rocks regardless of their structure when the Cobalt series was removed by erosion. Austen lake, in Hincks township, occupies a part of one such valley which extends south from the head of the lake for several miles and is occupied in the middle of Montrose township by the north-flowing section of the creek from Seven Inch lake. Another valley of this type lies about a mile farther east, extending north for 2 or 3 miles from Seven Inch lake. In the opposite direction it extends south up Midlothian creek, through Midlothian lake, and across into Lloyd lake, of which it forms the main north-south part. Here it passes into the Cobalt series, but still may be traced southward from Lloyd lake for several miles and through at least two other lakes. Similar cases, equally clear if not so striking, are common throughout the area.

Although superimposed forms are the most prominent in the parts of the area underlain by rocks older than the Cobalt series, the processes of structural adjustment are at work producing new forms and in places their operation has produced quite noticeable modifications. The main axis of Austen lake, Hincks township, is a superimposed valley, but deep bays run off in a southeasterly direction, along to the strike of the bedding of the lava flows. The main body of Midlothian lake parallels the bedding of the Kiask sediments in which it lies. Further instances of adjustment to structure may be observed here and there, where the older rocks stand high and are little covered with drift. In general, however, the average relief is low, and most minor preglacially developed features are now masked by drift.

Valleys resulting from erosion along zones of faulting also fall into the class under consideration. There are several of these in the district. One of them is the valley of Mistinikon lake, also described by Collins.[1] This fault may be seen on the west shore of Mistinikon lake at the narrows a

[1] Geol. Surv., Can., Mem. 33, p. 16.