

The source of the granite pebbles in the basal Kiask conglomerate is not known. Nearly all of the granites of the district contain more or less red feldspar, and, therefore, could not have supplied the pebbles which are all of white granite with the exception of the few on Boyer lake. A single dyke of a schistose, white granite was found at the north end of Hutt lake, and it is supposed that this, with others equally ancient, may have been the source of supply.

Relations to the Cobalt Series. The contact of the Kiask and the Cobalt series was not directly observed at any point. However, there can be no doubt that the Cobalt series is the younger and lies unconformably upon the Kiask. In the Midlothian area the Kiask series is steeply tilted and some of its softer layers have been more or less schistified by folding movements. The Cobalt series directly to the east lies uniformly flat, and is unmetamorphosed. A time interval of folding and subsequent erosion must, therefore, have intervened between the close of the deposition of the Kiask series and the commencement of the deposition of the Cobalt series.

Relations to the Granite Intrusives. At no point was the Kiask series found in contact with any of the granitic intrusives, so that the relation between them cannot be certainly known. On Elizabeth lake, however, the Kiask series is cut by many veinlets, most of which are quartz, but one of pegmatite was observed. The presence of this veinlet indicates that there is a body of intrusive granite magma not far away. The Kiask series is, therefore, tentatively placed in the geologic column as older than the granitic intrusives, until some more satisfactory proof of age can be obtained.

MODE OF ORIGIN AND HISTORY.

The nature of the Kiask series, as outlined in the preceding pages, is so remarkable as to make it difficult to outline a mode of origin for it which will satisfy all the facts. Briefly summarized, these facts are as follows:

The basal conglomerate in the Midlothian area is a granite conglomerate with only about 5 per cent of other constituents. Above this there is a heavy greenstone conglomerate, with not more than 10 or 15 per cent of other constituents. The overlying beds of grit and arkose, mingled with occasional beds of conglomerate, are chiefly composed of rhyolite debris. Any theory of origin, to be fully satisfactory, must explain where these three kinds of material came from, and why they were carried in and laid down in the order mentioned.

The sediments of the Midlothian area consist of granite conglomerate at the base, overlain in turn by greenstone conglomerate and by arkose with occasional beds of rhyolite conglomerate. The total thickness of the conglomerates is apparently 2,000 to 3,000 feet around Fault lake, thinning to about 300 feet both in the eastern and western ends of the area. The thickness of the arkoses and grits appears to be at least 6,000 feet. In the Bannockburn area, only 6 miles from Fault lake, the basal granite conglomerate is 30 to 50 feet in thickness, the greenstone conglomerate is altogether lacking, and the overlying beds are not coarse grits but fine