

Later Precambrian disturbances. During the long Precambrian erosion period the present surface rocks were gradually approaching the surface as the overlying rocks were, bit by bit, removed. They were therefore under progressively less and less load of overlying rocks, and, if subjected to compression during this stage, the effects produced would be very different from those brought about by compression under great load. That the rocks were so affected when much nearer the surface is clear, the main result being the production of the highly inclined or vertical, rather even cracks or fissures known as joints. There have been later times of joint formation in the region also, and the different sets are difficult of discrimination. But it is clear that there was some development of joints and faults, indicative of stress, at this time.

Late Precambrian igneous activity. During most of the long period of denudation which followed the time of the great igneous intrusions there was an absence of igneous activity in the region, at least in so far as near surface effects were concerned. But toward the close of the period, when the present surface rocks were no longer deeply buried, but were comparatively near the surface, molten rock again came up from beneath, likely from the same source whence the material of the great intrusions sprang. Whether any of this molten rock reached the surface then existing can not be determined, since no vestige of that old surface now remains, but in all probability there was volcanic action at the surface. The lavas utilized a system of east and west fissures or joints as their channels of ascent and eventually cooled and solidified in them. Such lava-filled fissures are known as dikes, and these dikes are very numerous in portions of the region, specially at the northeast. Their upper parts, along with their surface outpourings, were worn away long ago. Could they be followed in depth, they would lead eventually to the reservoirs which supplied the material with which they are filled.

There are two sets of these dikes, showing that there were at least two separate periods of igneous action at the time. The more common dikes are of heavy, dense, black rocks of the sort known as diabase. The others are less dense and heavy, usually