

gneiss, highly micaceous; and then twenty feet of highly quartziferous gneiss, containing quantities of large orthoclase crystals and a little mica. Above this, fifty feet of alternate bands of red and grey gneiss, varying in color with the quantity of mica present, and from the same cause changing in texture, being fine-grained when an excess of that mineral is present. The dip of these bands is S. 40° E. $<60^{\circ}$.

The next exposure occurs about four miles beyond the last, and two miles below the first fall. The rocks consist of red and grey gneiss. Similar exposures, having a dip N. 60° W. $<45^{\circ}$ — 60° , are seen at the falls. On the shore, immediately below the fall, are large beds of iron and garnet sands. These have been washed there by the strong eddy in river at this point, having been carried down from some point farther up the stream, where they are formed by the disintegration of the iron-bearing gneisses subsequently mentioned. Red and grey gneisses were seen, at distances of one, two, four and nine miles above the falls, having a dip of S. 60° E. $<70^{\circ}$.

At the foot of the four-mile portage, and fourteen miles above the first fall, was seen a yellowish-grey gneiss, composed chiefly of quartz and mica, and covered with a film of black oxide of iron about one-eighth of an inch thick. This rock is a decomposition product of the ordinary red gneiss, charged with grains of magnetic iron, and has been formed in the manner described in a subsequent paragraph. A short distance beyond, these rocks were found highly charged with magnetite in small grains. Dip N. 20° W. $<75^{\circ}$. Six miles beyond, greyish and pink gneiss, apparently holding much iron outcrops, with a strike S. 70° W. Three miles farther, dark red coarse-grained gneiss; strike S. 50° W.

At a small fall, three and a-half miles above the last exposure, is a red gneiss, weathering a pale buff, and highly charged with magnetic iron in lenticular beds and small grains. The beds vary in width along their course from half an inch to eight inches.

At the second small lake on the ten-mile portage, an exposure of coarse-grained red granitoid gneiss was seen. On the fourth lake occurs fine banded red gneiss. Dip S. 45° E. $<45^{\circ}$. Interstratified with these are beds of a micaceous iron ore, seemingly of great extent. These beds are not pure, but in the form of a gneiss, composed of quartz, mica and hornblende, with a very large percentage of iron ore.

On the last lake of the portage, besides the red gneiss, loose angular blocks of a dark greyish-blue trap, containing minute crystals of dark green hornblende and grains of dark grey quartz, were seen scattered along the shore, and had evidently not travelled far. Considerable beds of the iron-bearing rocks are also seen on the lake, interstratified with the red gneiss.