

orthoclase, grey quartz and black mica, predominates; with hornblende gneisses and schists, mica schists, crystalline limestones, and an area of triclinic feldspar rocks.

In the following pages a detailed statement of the rocks met with in ascending the Betsiamites River and on the route to Lake Mistassini and James Bay is given.

The rocks are first seen on the Betsiamites, seven miles from its mouth, and opposite the mouth of the Nepee River, where the hills of the Laurentian range are entered. Between this point and the coast, the river flows between sand-banks, with an elevation varying from twenty to fifty feet.

The first hundred feet of the exposure is dark-red, coarse-grained gneiss, composed of red orthoclase, grey quartz and mica. Dip S. 50° W. at a high angle. Then, for 600 feet, light red, fine-grained gneiss, in which the quartz greatly predominates, banded with coarse dark-red gneiss, composed chiefly of red orthoclase and grey quartz, with a small quantity of dark-green decomposed hornblende and mica. Also light-greyish gneiss, containing large proportions of black mica and dark-green hornblende. One hundred yards beyond the last, dark-red, coarse-grained gneiss, alternating with fine-grained bands for fifty yards.

Two and a-half miles farther up the river, an exposure of seventy-five feet was seen, the rocks being fine-grained red gneiss, alternating with bands of dark-grey hornblende and mica-schist.

One mile beyond was seen coarse-grained red gneiss, containing large crystals of pink orthoclase and black mica, with dark-grey quartz, for one hundred yards.

The next exposure occurred two miles further up the river, and consisted of fine-grained dark-grey gneiss, composed of light-grey orthoclase, black mica and a small quantity of quartz. Dip S. 60° E. < 60°.

Then, two miles to coarse-grained red gneiss, some of which exhibits no signs of bedding, and resembles the granite. The length of this exposure is about two hundred yards. Two miles beyond is fine-grained grey and red gneiss, the former predominating. Dip N. 60° W. < 50.

No outcrops now occur on the river for twenty-one miles, when the following fine exposure was seen. The section, in ascending order, is as follows:—Thirty feet, dark-grey gneiss, containing masses of almost pure pink orthoclase; then thirty feet of coarse red gneiss, composed chiefly of red orthoclase and grey quartz, resembling graphic granite. Many dark-red garnets, as large as peas, are scattered through this rock in bands. Above this is twenty-five feet of fine-grained grey