

which composed the sands were clearly seen to be arranged in order of specific gravity, the heaviest at the bottom of the series and the lightest at the top. Thus it was ascertained upon examination of a small bay about 200 yards above the last fall and rapids of the Gatineau at the Island, that the upper sand consisted almost exclusively of fine rounded grains of pure quartz, well sorted and free from impurities, whilst the lowest consisted of numerous grains of magnetite or other ores of iron in the shape of minute crystals, besides other impurities, hornblende, mica, garnet. The intermediate series of sand materials was of a decided gray colour, the lowest being dark in colour, whilst the uppermost sands were of a light yellowish colour, and the grains almost exclusively quartz.

In the band of hornblendic gneiss above the falls were noticed aggregations of the jet black variety of hornblende. This is the rock which has often been collected from the Gatineau valley and brought to Ottawa for examination as coal. It might, from its brilliant black lustre and general appearance, be termed the "Gatineau coal."

Several pot holes were also observed in the harder rocks of the upper portion of the falls, but these were comparatively shallow. In the bottom of one, eleven inches deep, was a mass of gravel and rusty sand five inches deep; the largest pebble was about three inches and a-half in length and two inches in its greatest thickness. Many of the rock surfaces of the river bed now exposed at low water were polished quite smooth by the rushing waters charged with sand, gravel or similarly hard, gritty and rocky detrital matter.

Near the head of the island were seen partially dissolved crystals of light pink coloured orthoclase felspar, held in a paste of somewhat darker coloured pink pegmatite, which appeared as rounded masses resembling plums in a pudding, and giving the whole the appearance of a conglomerate. These crystals vary in shape and size from a few millimetres to four centimetres in diameter. The rock has also a spotted appearance.

Among other phenomena observed and discussed on the spot, in the course of an examination of the rocks of the district about Chelsea, there were noted the well-marked raised beaches and