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of the same features as the valleys; included in the distance is the spot called *Les Eboulis*, displaying the ruins of a great land-slip, by which a vast mass of clay, sand and gravel has been precipitated from the higher ground and pushed forward into the St. Lawrence, where it is now spread out into an area occupying about one third of a square mile; the surface presents the mammillated character marking the lower levels of the valleys, whose aggregated hummocks may be due to a similar cause.

The rock formations met with in the district, in ascending order, are as follows:

1. *Metamorphic Group.*
2. *White Quartz rock. (Potsdam Sandstone.)*
3. *Calciiferous Sandrock.*
4. *Bituminous Limestone. (Trenton.)*

1. *Metamorphic Group.*—The prevailing rock which constitutes this mountainous tract of country is gneiss, sometimes of a granitic and sometimes of a syenitic character. On the west side of the valley of the Gouffre, where a path from Côte St. Antoine crosses a temporary foot bridge on the Bras du Nord-ouest, the rock is a true gneiss, with black mica; it holds garnets in abundance, and its stratification shews a dip S.E. mag.  $<30^{\circ}$ . Near the Rivière des Mares the rock was found to consist of opaque white quartz and feldspar with black mica, so aggregated as to give an excellent building stone. On the uplands west of St. Urbain Church, where the rock holds great masses of titaniferous iron ore, the mica was replaced by hornblende; and on the east side of Bay St. Paul, its constituents were greenish feldspar, translucent white quartz and black hornblende. On the west side of Murray Bay, above White Cape, the gneissoid character of the rock is very distinctly displayed in a set of beds, which are marked by diversities of color allied to red, green, black and white; these beds are granitic, but very quartzose, and there are some bands among them that have the aspect of a slightly micaceous quartz rock; crystals of hornblende are sparingly disseminated in some of the beds, and epidote is present in others. The dip of the beds in the locality is N. W. mag.  $<30^{\circ}$  to  $35^{\circ}$ , and there is present among them a large-grained red granitic dyke, running in general with the strike, but here and there shewing its intrusive nature by cutting the baset edges of the gneissoid beds at a very small angle. On the east side of Murray Bay near Les Ecorchis, the gneiss presents the aspect of a dark gray compact, slightly micaceous hornblende slate, which would yield excellent flagging; in some of the layers epidote is met with. The gneiss is here also cut by a very coarse-grained dyke running generally with the stratification and consisting of quartz and opaque white feldspar, the latter in large cleavable forms, while hornblende prevails on each side of the dyke towards its contact with the gneiss. A little farther to the eastward, before reaching Le Heu, there is a very great and conspicuous large grained white dyke of a similar character; although it runs with the gneissoid layers in direction and often in dip, it is yet occasionally seen to cut down through them. It holds a large preponderance of feldspar, and in many places contains rather thickly disseminated small pink garnets; on each side of the dyke for some feet, the rock, consisting almost wholly of mica, is set with a great profusion of large coarse imperfectly crystallized garnets of the same pink color as the small ones; they are accompanied by small quantities of graphite, and the garnet-bearing part is so interlaced and cut up by white strings and branches emanating from the main dyke, that it is difficult, without a little study, to say whether it belongs to the country or the intruded mass. Near a rivulet between Les Ecorchis

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and Le Heu this garnet-bearing dyke is suddenly brought up against the more regular gneissoid beds to the west, by a transverse dislocation, which heaving its continuation out of sight, (but in which direction it is uncertain,) serves, with an anticlinal fold in the beds to the west, to illustrate the disturbed condition of the strata.

The gneiss of this district belongs to that metamorphic group of rocks, which in previous Reports has been described as existing on the Ottawa, and as traceable thence, removed back usually to a distance of twelve to twenty miles from the north-west margin of the St. Lawrence, all the way to Cape Tourmente below Quebec, where it comes upon the river and from which it is washed by it to Bay St. Paul. None of the highly crystalline limestones, which on the Ottawa are so marked a feature of the group, were observed in the region under attention, but the examination has been of too limited and cursory a nature to determine their absence.

2. *White Quartz rock.*—This rock, which overlies the previous formation, was not seen at Bay St. Paul, but was met with on the west side of Murray Bay, above White Point, and at two spots on the east side, one of them within sight of the church just before reaching the Cape which it is necessary to double in proceeding along the beach to Les Ecorchis, and the other close by Les Ecorchis. In these three localities the formation consists of white translucent slaty quartz rock, rendered cleavable by the presence of silvery mica, into plates of half an inch to two or three inches thick, which appear to be conformable with the stratification; cracks in the rock occasionally present green stains due to carbonate of copper. If it were not for the fact, that in the different localities of its presence it succeeds different qualities of the gneissoid beds, while a uniformity is preserved in the character of the strata that succeed it, the rock might be mistaken for a more than usually quartzose member of the subjacent formation, from which however it might perhaps be occasionally distinguished by a want of conformity in its stratification. The thickness of the deposit at Les Ecorchis is about forty-five feet; but it is not improbable, that lying on an uneven surface, the inequalities of which it may fill up, it may be found to exceed this in other places. There appears to be little doubt that this rock is equivalent to the Potsdam sandstone of New York.

3. *Calciiferous Sandrock.*—Resting conformably on the previous formation, there is met with a calcareous sandstone, or arenaceous limestone, of which, though observed both at Bay St. Paul and Murray Bay, the sequence is determined by the exposures at the latter place. At Murray Bay the rock was met with at White Cape; the point which there bounds the boat cove on the south is composed of it; in the cove some beds, partially concealed by sand, dip N. W. mag.  $<51^{\circ}$ , but at the small point mentioned, the dip gradually changes by a fold in the strata to E. mag.  $<58^{\circ}$ . With this dip, the beds shew a breadth of about twenty-three yards, which would give a thickness of fifty-eight feet. As a mass, the rock is here a calcareous sandstone, but the arenaceous layers are interstratified with occasional bands of limestone, the uppermost bed is of limestone, and there are some few of the same kind near the bottom. In one or two of the arenaceous beds there are quartz pebbles as large as hens' eggs, constituting them conglomerates, but in general the grains range from the size of snipe to that of partridge and pigeon shot, and they are usually so well rounded as to give an oolitic aspect to the rock; they consist both of limestone and quartz; sometimes the calcareous but in general