

nowhere visible, so that it is impossible to determine whether the mass of Rigaud mountain cuts through the strata in question, as in the case of the Monteregian hills, or whether it is pre-Paleozoic in age. The same is true of the mass in Chatham and Grenville, the actual contact here also being found by Mr. Leroy to be banked up with drift. The narrow margin of gneiss shown on Logan's map¹ between the Chatham syenite and the Paleozoic is also conjectural, the area being likewise drift-covered. Rigaud mountain is furthermore of a different shape from the mountains east of Montreal, being six miles in length and only two and one-half miles wide; at the eastern end of it, moreover, there is found an occurrence of ordinary Laurentian gneiss. The abrupt and straight southern boundary of the Laurentian plateau along this part of its course probably marks a fault. Ells has noted the existence of other faults in this district, one of which he believes to follow the north side of Rigaud mountain. It is thus highly probable that the ridge known as Rigaud mountain does not belong to the Monteregian hills, but that it is a portion of the Laurentian plateau separated from the main area by faulting and stripped of its original covers of Paleozoic strata by denudation. It is probable that Mont Calvaire, as regarded by Logan, is also an outlying portion of the Laurentian plateau.

The hills on the west side of Lake Memphremagog and to the northeast toward the Chaudière river, referred to by Dr. Ells, so far as is known, are quite different in petrographical character from Mount Royal and the other members of its group. They constitute a chain of hills occupying a tract of country some four miles wide and thirty-five miles in length, in the heart of the Appalachian uplift and following the strike of the Appalachian folding. Many of them, as Owl's Head and Orford mountain, rise to a very considerable height, these peaks having a height of about 2,400 and 2,800 feet respectively; forming, in fact, the highest elevations in this part of Canada. So far as has been ascertained, these mountains are in all cases composed of

¹ Atlas to accompany the *Geology of Canada*, 1863, Map No. 2.