

1. The lowest in the neighborhood of the Chat are seen at a projecting point of land between it and the St. Anne River, where a considerable extent of strata are laid bare at the ebb of tide. The strata are highly tilted, and several dislocations occur; but it can be made out, that, based upon a strong bed of gray oolitic limestone, ten or fifteen feet thick, with a thinner one a short distance above it, consisting of flat calcareous pebbles lying on one another as if carefully packed on their sides, there reposes a mass of thin-bedded, dark-gray, yellow-weathering limestone separated by thin bands of black bituminous shale, with occasional thicker beds of the shale holding calcareo-arenaceous nodules or isolated masses, becoming very conspicuous in a considerable bed of bitumino-argillaceous shale at the top, where the nodules or patches sometimes resemble septaria, and are occasionally composed of a dull olive gray chert, weathering to a dingy red, in which the cracks or veins hold a mineral undistinguishable in its general appearance and combustible nature from good sea-coal. * *

The whole of the deposits given amount to about 1140 feet in thickness, and the distinguishing features they present are the bands of conglomerate limestone, and the *bituminous mineral so much resembling coal*. This is found not only in the septa of the cherty nodules which have been mentioned, but also in many small cracks across the strata, and in more parts than one of the vertical thickness. A similar mineral, in an analogous position, is found in the rocks at *Point Levi and Quebec, and in the museum of the Quebec Natural History Society a block of it, procured in the neighbourhood, containing about a cubic foot, is preserved*. Some have been inclined to suppose that it might indicate the proximity of workable coal, and indeed I have been asked whether a mine upon it, in a position which I have not yet seen, but where according to information received, a cart load of it has been obtained, would be likely to be successful. Now none of the material where it has come before me in situ, bears any analogy in the mode of its occurrence to workable coal. This is always found in extensively continuous beds conformable with the stratification; whereas the mineral in question occurs in cracks cutting the strata across for greater or less distances.—It is true that where faults or dislocations exist among coal seams, there is often met with running across the stratification what by Scotch miners is termed a *vise*, and by Welsh, a *leader* of coal, which in general is a thin, confused, irregular interrupted black more or less carbonaceous sheet, conducting up or down, as the case may be, in the plane of dislocation, from the termination of a coal-bed on one side to that on the other; and there is no doubt it is the result of the grinding of the terminal edges of the strata against one another, when the slip producing the dislocation occurred. Without a slip or displacement, therefore, no leader would be found, and none in any case would hold true coal matter extending beyond the distance between the separated edges of the coal-bed. Now in the case of the bituminous mineral, the cracks

in which it occurs are, in many instances, unaccompanied by any displacement of the strata, and in others, where the extent of the dislocation (that is the upthrow or downthrow, as it is called) is visible, no layer holding any of it occurs among the beds. Independent of all this, the formation in which the mineral is found, is an inferior member of a group of rocks, whose place is in all probability a very considerable distance below the position of the true workable coal-bearing measures, and we are, therefore, not warranted in expecting coal seams to exist in it. The rock is supposed to be the equivalent of a part of the Hudson River Group of the New York geologists.

But this plain straightforward story is not satisfactory to the City Council of Quebec, when they are told that the worthless shale is a coal mine. They forthwith set the treasure finder on an investigation, who tells them he can do nothing until the fine weather comes, and in the meantime begs them not to allow any one to touch the least bit of the valuable mineral, lest he should lose the trace of it, and then of course the whole would vanish after the same fashion as the doubloons, which wizards made the devil bring into the enchanted circle to their patrons; but which were never safe until every magic rite had been exactly fulfilled. We pretend to no scientific knowledge; but it requires no such knowledge, to be able to laugh at such ridiculous pretensions as these. Everybody knows that Sir R. Murchison predicted the probable discovery of the Australian gold mines from the other side of the world, so soon as he knew the character of the more obvious geological features of the country. He wanted no trace. And so it is with all kinds of minerals. The crust of the earth is composed of many distinct layers, one above the other, which are always found in the same order, though they are not always all present in the same localities. For instance, suppose we describe these deposits as 1, 2, 3, 4, 5, 6; 6 representing the upper layer, it is possible to find 1, 3, 5, 6, or 2, 4, 6, or any greater or less number of the deposits; but the order is never changed, 6 never goes to the bottom, nor one to the top. Now the reasoning to which this fact gives rise is obvious. Suppose 5 to represent the coal strata, if the surface of the earth in any one place be composed of the layer 4, or any number lower than that, we are sure no coal is there. It is known that it can only occur between layers five and six, and though it may not necessarily be there, when we have these two strata, it is very certain it cannot be present, where they or higher strata are absent.