

tact with oxygen, as is often found at the beginning of winter in some of the lakes of the north-west), the capability of spontaneous illumination which Richardson attributes to the identical exhalations of Fort Norman, has not been found to exist in this gas. It is impossible to attribute to the Indians the extinction of the fires of bituminous schists in the Athabasca-Mackenzie system. Their ignition is intermittent, without apparent cause, and unstable. It is, moreover, accompanied by a strong smell of petroleum, whilst hydrogen is inodorous. But the carburets of hydrogen, of which petroleum is composed, do not make it, any more than they do fire-damp, spontaneously inflammable, even on contact with air,—in spite of received scientific opinion. We must, therefore, consider them as one of the effects of igneous action, materially connected with the fire of the volcanoes; for the Boucanes occur under similar conditions to the vents of these subterranean fires, being found on the river banks, on intermediary strata inclosing schist, bitumen, lignites, thermal sulphurous or saline waters, rock-salt, &c.

I have observed a saline spring near the confluence of the Clear-water; a little below this point the Athabasca receives a saline feeder, which rises in a natural salt spring of considerable size; and below Lake Athabasca, on the left bank, is a second saline feeder, rising in the Caribou Mountains, which contain vast deposits of rock-salt and a cavern remarkable for its crystalline concretions.

Still further, between Forts Simpson and Norman, two other saline streams, unfit for drink, are fed by the mines of rock-salt contained in Clarke's Rock, a mountain of volcanic aspect. Lastly, there is a fifth saline river not far from the Arctic Ocean.

About 56° 30' N. lat., the Athabasca meets Birch or Bark Mountain, a continuation of the heights forming Portage-la-Loche or Methy Portage (named after the Loche or fresh-water cod-fish), and leaves its former course in order to open a way across the ravines of the mountain, thus making a right-angled elbow to the east. This wonderful cañon is called the Great Rapid. For some 25 to 28 leagues it impedes and much endangers the navigation of the Athabasca. Besides the Great Rapid, properly so called, the traveller must pass as best he may the Brûlé, Noyé, Pas-de-bout, Croche (or Sinuous), Stony, Cascade, and Mountain rapids. In short, the whole make one continuous rapid, twice as long as that of the Bear River, for the current sometimes reaches a pace of 12 to 15 miles an hour.

There is, nevertheless, strictly speaking, no cataract in the Athabasca cañon, only a very strong declivity, in the form of a rapid flat sheet of water, obstructed by enormous boulders. At its commencement the river finds itself checked by the vast natural dam of Bark Mountain, the base of which is sandstone or madreporiferous limestone. The raging flood dashes against this obstacle, in which it has striven to batter a breach for centuries, washing away and carrying off the quartzose