

marshes to a depth of eight feet." On the summit to which reference is made in the preceding paragraph Mr. Stark found a level plain, consisting, "to a depth of from ten to twenty feet, of moss, lying upon the bed of a lake which its formation had buried." Mr. Stark found the highest elevation of this moss at the summit 118 feet above datum, "and taking from this the depth of the moss already described, or 20 feet, will leave the elevation of the solid ground only 28 feet above the canal bottom or 10 feet above the marsh level." One hundred and eighteen feet above datum, less 20 feet of moss, is 98 feet above datum, or two feet less than the height attained by the Saxby tidal. It is clear, therefore, that if this moss were drained and burned, according to Mr. Keefer's suggestion (*vide* Report), another "Saxby Storm" would have an uninterrupted sweep across the Isthmus, and temporarily establish water communication. A storm like that which occurred in 1759 would make quick work of the marshes and floating bogs, and probably reduce the isthmus to a permanent strait at high water, with continually increasing depths in the channel. In fact, according to Mr. Stark's Report, there appears to have been nothing but a bank of spongy "moss," a quarter of a mile in width, a mile-and-a-half in length, and of a depth varying from 10 to 20 feet, "which prevented the Saxby tidal wave from converting Nova Scotia into an Island during the night of October, 1869, and the storm of November, 1759."

Now, if these marshes or masses of spongy moss be drained by the Canal, consolidated and compressed, what is to prevent another Saxby storm from sending a tidal wave by the side of the Canal from the Bay of Fundy to Baie Verte?

Nor is the mossy plain, referred to in Mr. Stark's Report as having 20 feet of moss in its deepest part, the only low summit between the Bays. Mr. Baillairgé found in the contemplated line of Canal the summit to be but five feet over the Saxby tide, and "the surface of this ridge is of a soft marshy nature, under which there is, for the most part, clay resting on red sandstone" (Mr. Page). The report does not state the depth of the soft, marshy material reposing on the clay, but as the summit is only five feet above the Saxby tidal wave, the clay

may not exceed the altitude of the solid summit on Mr. Keefer's line, and notwithstanding the careful character of the borings conducted on the summit of the watershed, may there not be a still lower depression than those discovered?*

Mr. Alex. Monro, P.L.S., conducted borings in the mossy plain at the summit above described, and found the thickness of the moss to vary from 9 to 13 feet, but below this bed of moss there was an accumulation of fallen timber. "The crust of the plain for a depth of about 5 feet is composed of roots and live moss; below this depth the material appears to consist of rotten moss and decayed vegetable matter, resting upon the fallen timber of a buried forest, probably accumulated centuries ago, the whole resting on clay and red sandstone rock." The "buried forest" is probably drift wood. The evidence of rooted stumps would be required to entitle it to the name of "buried forest."

4. THE SUBMERGED FORESTS.

The submerged forests at the head of the Cumberland Basin, have been described by Dr. Dawson, with his usual clearness and detail, in his well known work, "Acadian Geology." The valuable information there given and illustrated, is supplemented in the Departmental reports of the survey of the Baie Verte Canal, by plans and sections, showing the position of the submerged forests and their present depths, which leave nothing to be desired respecting their origin; it being incontestably shown that they represent two belts of former upland forests, now submerged to the depth of about 21 and 32 feet below the plane of the marshes.†

Now the first question with which we have to grapple is this: Do these submerged forests indicate a subsidence, as Dr. Dawson suggests, to the extent of about 40 feet, or are they the results of *denudation*, through the influence of the tides, and represent a landslide?

Two years ago I had an opportunity of watching the progress of several patches of grass-covered turfy soil, resting on a sandy substratum, and recently detached from the

* Notes respecting underground forests. Appended to Baie Verte Canal Reports.

† "It only remains to believe that a subsidence has taken place over a considerable area, and to a depth of about 40 feet."—*Acadian Geology*, page 31.