

bordering on the Dead Sea and the Caspian, is no greater than the evaporation, that it remains as now, and has not been submerged long ago. With such a climate as you have, and as we have in Great Britain, where the rain that falls is greater than the evaporation, the population of those regions would have been annihilated by the rising waters.

#### SWAMPS AND WET LEVEL LAND.

There are large tracts of country, which are not either above or below the level of the sea; but which are so flat, that the water that falls, remains and stagnates. In this country, large tracts are rendered useless for agricultural purposes, by the extreme evenness of the surface. In New Brunswick, there are large tracts of this character, and which seem to defy agricultural improvement.

Again, there is a tract of country on the bay of Chaleurs, which though exceedingly flat, is naturally fitted to become as rich as some of the richest lands of Scotland, even those celebrated for their richness. It is so flat, that the water cannot escape. It is not a bog, or a swamp, but so wet that it cannot be cultivated profitably by the settlers.

Besides these phenomena, there are certain natural obstructions, which present themselves, in the course of rivers, and give rise to new conditions of the country bordering on them, which are more or less unfavorable to the growth of crops, but which farmers make profitable. In New Brunswick, there are many such—which may be called bogs, or swamps. In your own State, in Cayuga county, I believe chiefly on the outlet of Cayuga Lake, lies the Montezuma Marsh. I have not visited it myself, but am advised, that the marsh is formed by obstructions, which can only be removed by operations on a large scale, by which a partial drainage is effected, and thus the water enabled to flow from the lake, and thus a large extent of land, capable of being made of the most productive character, may be redeemed from barrenness. In other parts of your country, in Georgia, for instance, there are large swamps, and in Florida, there are what are called *evogelades*; in regard to which, I am happy to hear, that steps are talked of for draining and reclaiming.

#### THE RHINE—FORMATION OF HOLLAND.

I promised to draw your attention to the Rhine. The Rhine, when it reaches the North of Europe, becomes loaded with mud to a great degree—not so great as the Mississippi; but there is the difference: the Rhine empties itself into a bay, where the waters from the north and south-west meet, and a drawing back takes place, and a precipitation of the earth in suspension goes on at the mouth of the river itself. Now, there was a time when these deposits took place without being heeded; when there were formed islands of small extent, the edges of which being raised above the rest, by the action of the waves and the current, formed strips of land on which trees and plants grow—the external being higher than the internal parts—thus forming a large extent of boggy, muddy, and sandy country, stretching from the mouth of the Rhine, north, to the Zuyder Zee; that is to say, forming the country now called Holland. By degrees, the fishermen settled on these little knolls, and fertility being soon known, the farmers were attracted thither, and by indomitable perseverance and enterprise, these and the adjacent lands were reclaimed by artificial works, and form what is now the limited province of Holland. I will not dwell on the history of this people; but you must see, that the character of a people in such a country, formed originally by natural operations, and reduced to a habitable region by human perseverance

and skill—you must see in the nature of the country, which must have moulded the character of the inhabitant, and formed the national character of its people—something of their remarkable characteristics. If time permitted, I might enter into details illustrative of these—the result of personal observation in that country—going over its dykes, sailing on its canals, and witnessing everywhere the triumphs of human power and art over extraordinary difficulties, a country which, from the beginning of the Christian era, has been subjected to continually repeated inundation. Records go back through a period of thirteen centuries, during which have been great inundations, which have broken up dykes, let out canals, overflowed cities, and drowned large numbers of people, once in seven years. For thirteen centuries, the Hollanders have been subjected, on an average once in seven years, to these inundations. I have thought, in going through that country, how many struggles that people have undergone, what perseverance they have displayed, what victories they have achieved over stubborn and apparently indomitable nature, what effect the consciousness of having done all this must have upon individual as well as national character, and what a great triumph it is in itself, thus to have fixed themselves firmly on the soil!

Gentlemen, it is useful to us—it carries with it a great moral lesson—to survey such a country as this; teaching us that those who possess great natural advantages, whether as nations or as individuals, are not always either most blessed or happy; that difficulties bring out energies of individuals and nations, and that those nations and those individuals are not only happiest, but in general most successful, who have those difficulties to encounter.

#### TIDES IN THE BAY OF FUNDY.

With the subject of rivers are connected the tides. The flowing of rivers is naturally connected with the flowing of tides, and the flowing of tides is a physical phenomenon intimately connected with agricultural prosperity in many parts of the world. I need not go far for an illustration—if I take you to the Bay of Fundy, which separates Nova Scotia from New Brunswick—the waters of which rush up with great velocity, and rise to a great height. Fifty or sixty feet is an unusual tide at the head waters of the bay. As they rush up, they sweep the banks on either side, which on the Nova Scotia side are composed of a species of rock and clay, and arrive at the extremity of the bay loaded with mud to a very great degree. They are the muddiest waters I ever saw. This mud is deposited at the head waters of the bay, in great quantities, and forms the richest land existing in that part of the world. The richest land in Nova Scotia and New Brunswick, is formed of such deposits as these—mainly from the waters of the Bay of Fundy, which not only bring with them the ingredients that fertilize the soil they form themselves, but bring to the industrious farmer the means to fertilize the uplands to a great extent. I do not mean to say that there, or in other parts of North America that I have visited, the advantages of these deposits are fully put to use; but still, the means these marshes afford of enriching the uplands is very great, and capable of producing enough to nourish a large population.

AMOUNT OF RUTA-BAGA TURNIPS CONSUMED BY STOCK PER DAY.—An ox weighing 40 stone, (560 lbs) will eat about 100 lbs of ruta-baga or Swedish turnips a-day along with straw or chaff. Ten sheep of 64 lbs. each, will eat about 200 lbs. in the field, and rather less in the house.—*Agricultural Gazette.*