

the heavier soils. And here, without digressing much from the subject, one can scarcely avoid observing very apparent marks of design—the adapting of the pine to grow on soils unfitted for cultivation, and the leading of rivers through pine-bearing soils, thus enabling the settler to take advantage of the various properties of running water in conveying and preparing the most useful of all timbers for his manifold purposes.

The valley of the Don is from a quarter to half a mile in width, with abruptly rising banks, from 100 to 200 feet and upwards in height, the scooping out of which implies the removal of many hundred millions of cubic yards, a quantity so immeasurably great when brought into comparison with the agent of removal—a stream (when not dammed up) only about 50 feet wide, that it appears altogether irreconcilable with the inference drawn; more especially is it so, when we know that the annual quantity of matter brought down by the Don is at present inconsiderable. If, however, we bear in mind that, without assuming a greater volume of water to have flowed in its channel than now, the transporting power of the Don must formerly been very much greater by reason of its greater descent and rapidity; and, if it can be shown that many ages have elapsed since it first came into existence, the conclusion come to may be taken as rational and correct.

It may seem difficult—nay, almost impossible—to estimate, however roughly, the time which has elapsed since the Don commenced to flow; but if we can arrive at the age of any other river emptying its water into Lake Ontario from a source equally high, the problem is solved. When the great Lake already mentioned, subsided from its high level, then, and not till then, did the Niagara, the Don, and other cotemporary rivers make their appearance. Since that epoch the Niagara has cut a deep channel for seven miles through the solid rock; its annual recession has been ascertained approximately, and from these data its age has been roughly determined. “We may turn to the deep ravine,” says Lyell, “and behold therein a chronometer measuring rudely, yet emphatically, the vast magnitude of the interval of years which separate the present time from the epoch when the Niagara flowed at a higher level.”

Thus, then, the Don, coeval with the Niagara, has flowed, according to this great Geologist, for a period far too great for the imagination to comprehend, and which one can scarcely venture to name by years; * even allowing that our historical knowledge of the past condition of the Falls is far too meagre to estimate with any degree of precision, the rate of their retrogression in former ages, yet we cannot but arrive at the conclusion that the chronological age of the Niagara and consequently of the Don, must be so enormously great, that one would think even its fractional part would suffice for the removal of the hundreds of millions of yards of matter by the latter river to the Lake, without calling to its aid any unusual phenomena.

Having thus shown that sufficient time may be granted, the Don therefore supplies an adequate cause for performing, and completing long since the work assigned to it; year after year during its early history, slowly but constantly hollowing out a channel and removing the former contents of its valley to the

lake, the lighter and more soluble matter being held for some time by the water, to be distributed far and wide, the heavier particles on the other hand to be deposited near its mouth, in the form of an extensive shoal or delta—the base or ground-work of the Peninsula, on which again to be deposited a drift from other causes and from another source.

To be continued.

On the Preservation of Food.

BY J. T. BRIDGEEST, ESQ.

Read before the Canadian Institute, December 10, 1853.

Interesting in an economical point of view, this subject becomes much more so when we consider how large a portion of the exports of Canada consist of provisions, and the shipments from Toronto of little else.

This has been the subject of care in other countries, and in distant ages, when either from want of skill, or the accidents of war, famine was more prevalent than in modern times, and in those places with which we are the more familiar; the freedom of intercourse now renders the surplus of one country so accessible to supply the wants of another, that the deficiency of crops must be far more general than any that has occurred for years, before we require any particular arrangement, for preserving the products of the soil from one year to another.

But let not this fancied security prevent us from examining into the matter closely, for, apart from the possibility of the wheatly devastating other parts of the world in the way Lower Canada suffered for many years—let us not forget that constant waste is a constant loss, without any countervailing benefit, and that we agitated for years for a grant from the Mother Country for a protection on our breadstuffs, falling far short in amount of the loss occurring in our grain stores from destruction by rats and mice alone. And in forwarding grain to its destination, much as it has been improved upon of late years, there is still in every portion of the process loss and injury.

I propose, therefore, to give my views on the subject of the preservation of articles of food, premising that I offer nothing new, having often previously on other occasions urged the matter on the attention of my fellow-citizens, and also intimating my anxious desire that my remarks may call forth something much better than what I now offer to your notice.

Our warehouses for wheat are mostly constructed near the water, often so low as to be in danger from floods; they are built of wood, many of them in bad order, subject to destruction from fire, and infested with vermin.

Owing to the short time our grain remains in the warehouse, the weevil, so destructive in Europe is little known, were it necessary to store grain for any lengthened period, there is little doubt the destruction with us would be excessive, our granaries being so accessible to heat.

I would propose as a remedy for all these, the construction of “silos”—warehouses built of brick in the form of a hollow cone, like a tile-kiln, cemented outside to keep out the weather, having an iron cover on the top, and an opening at the lower portion to let out the grain—the grain is put in at the top, either by an Archimedian screw or by a crane, and taken out below as required; and as the grain is moved throughout the whole mass whenever any is removed from beneath, to air the grain nothing further is required than to take some out below, and put it back again at the top.

These buildings were used in ancient times, and are still used

* Mr. Bakewell calculated that, in the forty years preceding 1830, the Niagara had been going back at the rate of about a yard annually, but I conceive that one foot per year would be a much more probable conjecture, in which case 35 000 years would have been required for the retreat of the Falls, from the escarpment of Queenston to their present site, if we could assume that the retrograde movement had been uniform throughout. This however, could not have been the case, as at every step in the process of excavation, the height of the precipice, the hardness of the materials at its base, and the quantity of fallen matter to be removed, must have varied. At some points it may have receded much faster than at present, at other much slower, and it would be scarcely possible to decide whether its average progress has been more or less rapid than now.—*Lyell.*