

3d. For leakage, absorption, evaporation,
&c. of canal,

777,600

Total,

3,801,500

This sum is the *due supply of water* required per day. We will call it in round numbers 3,800,000 cubic feet.

Having arrived at the due supply of water required daily on the summit, we will next remark upon the number of days per year that we have supposed the canal to be in use, for upon this depends the amount of annual expenditure of water.

The Chesapeake and Ohio canal during five years that a part of it has been in operation, has not been closed in winter on account of ice on an average more than 60 days in the year. From experiments made last winter upon that canal, we are warranted in saying that with a sufficiency of trade to justify the expense the canal, navigation need not be suspended more than two months; we have said 65 days leaving the round number of 300 days for the period of navigation.

We have not at hand the means of stating the precise average of loss of time on the Erie canal. We think however that it is about four months. On the Pennsylvania canals we suppose about three months.* On the Dismal Swamp canal in the southern part of Virginia and northern part of North Carolina, the loss of time from ice may be considered as nothing.

We think therefore that the 300 days assumed by us as the navigable period of the year is not out of proportion to experience elsewhere. In this view the annual due supply of water for the cross cut canal will be $(3,800,000 \times 300 =)$ 1,140,000,000 cubic feet.

It will be an interesting inquiry: How does this result compare with the experience of canals now in use?

First. We will refer to the Union canal of Pennsylvania, on whose works it has been necessary to resort to

*In 1836 the Erie canal, N. Y., was not navigable till the 25th April, and the Pa. canal till the 15th of the same month.