

of Cumberland will require a levee to shield it against the probable augmented height of freshets; which augmentation will be produced by the works of the "low level."

Previous to commencing the works at Cumberland, the ordinary summer level of the water at the mouth of Wills' creek, was, in the pool of the old dam, about $2\frac{1}{2}$ feet above the present bottom of the canal. The comb of the canal dam will be elevated $6\frac{1}{2}$ feet above bottom; thus producing a perpendicular rise, upon the old water surface, of 4 feet at low water.

Without entering into any disquisition upon the peculiar profile assumed by the pools of dams in freshets, or the measure of the increased height which floods in rapid streams invariably assume at the head of a slack water pool, I will venture to express the belief that the augmented rise of freshets at Cumberland, (to say nothing of the probable gorging of ice in the pool of the new dam, the effect of which none can estimate,) will not be much less than the four feet by which the old surface will be elevated.

Again, the extensive flat below Cumberland, and extending to Hoyer's Mill, generally known as the "island," over which formerly the river always spread itself in extreme freshets, obtaining, on such occasions, a high water channel of near 800 feet broad, is now excluded from overflow by the guard bank of the canal, which will never be overtopped.

Taking, then, these two facts into connection,

1. An absolute elevation of the water surface at the place, to the extent of four feet perpendicular;—

2. An absolute contraction of the high water channel of the river nearly one half, and it occurs to me that the works of the "low level" will place the river in a worse position than it occupied during the freshet of 1810, which swept through the town several feet in depth. On that occasion, if I am correctly informed, the "island" was covered with standing timber, against which an immense mass of drift lodged, and occluded the river, (though less effectually than the canal bank will do hereafter.) Now, if that freshet thus dammed out of the "island," had been borne up by a substratum of water four feet higher, would not the result have been more disastrous? would not both property and life in Cumberland have been periled then? Those who witnessed that flood, can answer best; but from the statements made to me, I should anticipate affirmative replies to both questions.

If the canal should be put in operation, without construct-