

locks and aqueducts, and giving increased height to the lock gates; a ruling depth of seven feet or more can undoubtedly be secured for the levels without disturbing the foundations of the locks, and without digging out the bottom of the canal, and without lowering the crown of the arched culverts.

The greater economy of getting depth of navigation on your plan is too obvious to require explanation. The importance of leaving the bottom of the canal untouched cannot be overestimated in our judgment, especially where portions of the canal has been built through a limestone region. All new canals will waste water at bottom, until in time, a silt or fine mud settles down, and to a large extent prevents this leakage. It is therefore most desirable not to disturb the bottom of canals.

The Chesapeake and Ohio Canal in many of its levels was unfortunately located too low, and has always been a source of anxiety and often of great cost in consequence of overflow in time of river floods. We have no hesitation in saying that by increasing the depth of the canal on the plan of your "new method," this very serious defect in the first structure of the work will in a great measure be cured, and the Canal Company will hereafter be saved from those embarrassing delays and costly evils.

There are other features of your scheme of improvement, on which it is not necessary to express our views at the present time. We need not at this time examine the question of enlarging the locks and aqueducts, and the canal generally, to fit it for the use of boats of 300 tons burden as you suggest. We see, however, in such points of change as we have above referred to, abundant merit to command our hearty approval; and we cheerfully certify as our professional opinion, that under your "new method" the following valuable results can be attained:

First. That the prism of the canal can be deepened to seven feet—or to a greater depth if required.

Secondly. That the canal will be made safer in its whole distance from the wash and overflow of floods in the river.

Thirdly. That the business of the canal will be but little, if at all, impeded during the progress of the work.

Lastly. That these beneficial results can be effected at a greatly reduced expenditure of money.

Respectfully yours,

ISAAC R. TRIMBLE,
CHAS. P. MANNING.