

APPENDIX A.

Report of Levels and Soundings taken on the Passaic River from
Chatham to Millington Bridge, and also on Dead
River, by Prof. Ed. A. Bowser.

A line of levels was run from Chatham Bridge to Millington Bridge, and also on Dead River as far as the second bridge from its mouth. From these levels the heights of the benches were determined at all the intervening bridges. The heights along the surface of the water were found by leveling from these benches. The heights along the *bottom* were determined by sounding in the channels of the rivers, and subtracting the depths from the heights of the surface. In the accompanying profiles, the top of Beatty's Dam, at Little Falls, is the datum plane. The heights of the points, both along the surface and the bottom of the rivers, were measured from this plane.

It will be seen, by a careful examination of this profile:

1st. That the bed of the Passaic from Chatham Bridge to Page's Dam, has a rise of twenty feet, while each dam, viz: the first just above Chatham Bridge, the second, Edward's, and the third, Bunnell's, backs the water up to the dam next above it.

2d. That the bed of the river from Page's Dam to Smally's Bridge, distant eight miles, following the course of the channel, has a rise of six feet, while the bed of the river at Smally's Bridge is two feet *lower* than the top of Page's Dam.