

of the path, as I have remarked of the parts below, has the consistency of a MacAdamized road, and the banks appear to be of a consistency to resist effectually the wash and filtration of the water. The expense of the work thus executed, on these fifty miles, was \$2,892,000. This includes the expenditure on portions of the remaining 18 3-10 miles, which are begun and not finished. These embrace the most difficult and costly parts of this division of the canal, and they are now so far advanced as to admit, for the most part, of being finished in about the same period of time which will be required for the execution of the lighter sections yet untouched.

The most difficult and expensive portion of the work which remains to be completed, is one on which the greatest amount of cost and labor has been already expended. This consists of a tunnel and deep cut, through a rocky projection of the mountain, by means of which a circuit of about five miles, along the bend of the river, with much expensive work along its precipitous bank, is avoided. The length of the tunnel, all of it through a slate rock, is 3,118 feet, and including the deep and expensive cuttings at the two termini, particularly the eastern, where for a long distance it is of great depth, the length of heavy rock cutting is about a mile. The depth of the tunnel, through the highest summit of the rock which it passes under, is 360 feet. A great part of the excavation of the tunnel, in consequence of the time occupied in opening the approaches at the termini, consisting of long and deep cuttings, was made by working through two pairs of perpendicular shafts, one of which is of a depth of 126, and the other 166 feet. The waste rock of the excavation was hoisted alternately through the two openings, in each pair of shafts, and the two served to sustain a current of air, by which the tunnel was more easily and effectually ventilated.

It would require the whole compass of my letter, to enable me to give you a satisfactory description of this gigantic work. I can only add, that the work is only so far completed, that the entire mountain is perforated, so that the air passes through it; and our whole party, each with a lighted candle in hand, walked through it. The rock is full of fissures, from some of which there are occasional slight tricklings of water. Masses of rock occasionally fall from the roof and sides of the opening, and in places the passage is much obstructed by them. Much of the loosened material is suffered to remain, because it will be needed in the completion of the work which remains to be done within the tunnel. Our path was therefore very uneven, and sometimes difficult. We picked up some curious specimens of stone, which attracted our attention in the dim light as we passed. Among them were a few fossil specimens of vegetable formation, which were taken where the superincumbent rock was 160 feet in height. The cost of the excavation thus far was about \$80,000, and the estimated cost of completing it is about an equal further sum. What remains to be done is to form a coating for the whole tunnel, to consist of a brick wall