

5th. The grade line should be "raised up bodily from one to three feet, throughout its entire length," upon a portion of the line where, for three-fourths of the distance, it already averaged from two to twenty feet above the natural surface of the ground.

6th. Coping should be dispensed with in all bridge masonry; "for the reason that the weight of the bridge coming upon the front edge of a projecting coping, would have a tendency, either to detach the coping, or pull over the Pier."

7th. The ends of the cross-ties should be thoroughly surrounded by ballast, extending outwards several feet in width, in order to facilitate the proper drainage of the superstructure.

8th. "It is a matter of fact that an undulating Railway, so long as the undulations are short, and do not exceed 30 feet in a mile, can be worked quite as easily as a level road; the downhills compensating for the ups."

9th. When an Engineer supersedes another in charge of the construction of a line of Railway, it is expected that he will condemn everything that has been previously done, and change all the plans for future work.

The following may perhaps be more appropriately classed under the head of

#### MODERN ENGINEERING PARADOXES.

1st. "Culverts or water passages," upon the North Shore Railway, which "are built upon imperfect plans," have withstood the severe tests of two lower Canadian winters, without showing the slightest indications of failure; while those that have been built upon the most