

Painting Metal Bridges.

In the early part of 1895 I began to investigate the subject of painting metal bridges. After reading what literature I could obtain, I determined to make a few experiments for myself, the results of which are here presented. I do not feel at liberty to give manufacturers' names in a communication of this kind, particularly as my tests are so few; but I have no objection to giving, in a less public way, such facts as I have, to persons interested in the subject.

Twenty-four new wrought-iron plates, one foot square and three-eighths of an inch thick each, were painted two coats of different kinds of paint, under precisely similar conditions, the boiled linseed oil being the same in all, excepting those samples obtained ready-mixed from the manufacturers. These plates were provided with hooks on the back, and hung on the lower chord eye-bars of a steel railroad bridge 1,900 feet long, across a strait or arm of the sea, in latitude $45^{\circ} 56' N.$, longitude $60^{\circ} 59' W.$ They stood vertically at a height of nine feet above the water surface, and were exposed to the sun and salt air at all times, and also to salt spray in rough weather. They faced the prevailing wind from the north-east.

This strait, or arm of the sea, is situated about 35 miles from the Atlantic Ocean, lies north-east and south-west, and forms a narrow passage five miles long and 1,900 feet wide, between two large inland basins. The strait is bounded by high land on both sides, the bridge crossing it in an east and west direction. The wind usually comes from the north-east, and a light breeze causes spray to be dashed against the floor. In storms, the spray is thrown over the floor and across the bridge. The rise of tide in