motion. Tornadoes are believed to be whirlwinds on a large scale, produced by the struggle of two winds moving in opposite directions in the upper regions of the air. Impelled in the directions of the strongest wind, the two contending forces move on within the sphere of a double cone, the most violent action being at the union of the two bases. This view being correct, the Niagara Bridge can never experience the full force of a hurricane. The towers may come within the sphere of its action, but not the bridge itself. I mean to say, not enough to experience a great uplifting force.

EFFECTS OF THE TROTTING OF HORSES, OR CATTLE, OR THE MARCHING OF MEN.

This is a subject which next to the effect of high winds is most important to be considered. The Niagara Bridge is a great thoroughfare for all kinds of stock. Drovers of cattle are, according to the regulations, to be divided off in troupes of 20, no more than three such bodies, or 60 in all to be allowed on the bridge at one time. Each troupe is to be led by one person who is to check their progress in case they should start off on a trot. If these rules and regulations are strictly observed, the bridge will be spared much abuse. On several occasions I have noticed the injurious effect, produced by 20 heavy cattle under a full trot. Standing on the lower floor at the time, I could perceive no apparent motion in the bridge, but felt a most intense trembling and short vibration. If the cattle happen to move all on one side, outside of the center, the effect produced, is also lateral, and con-