With regard to the compression of the upper chord; it is scarcely necessary to state that the oblique pieces, *ao* & *oc*, exert at *o*, in the direction from *o* to *n*, the same force that they exert in the opposite direction upon *cd*. In fact, the thrust of *on* and the tension of *cd*, simply act and react upon one-another through the media of *ao*, *oc*, & *ac*; whence, the thrust or compression of *on*, must be just equal to the tension of *cd*; and furthermore, the thrust of *nm* is the indirect counteraction of the tension of *de*; and, as the two forces are in opposite and parallel directions, they must be equal, being in equilibrio. Also, *mlk* must sustain the same compression as *nm*, throughout, since the diagonals meeting the chord at *m* & *l*, are inactive under the full load of the truss. Of course, *ki* is liable to the same maximum compression as *on*.

From what precedes, it can not fail to be obvious, that the maximum action upon all parts of the upper chord, occurs at the same time with that of lower chord, namely, under the full load of the truss.

By the weights *w*, *w*, &c., we have represented the variable load of the bridge, which may be laid upon or removed from the several bearing points of the truss; thereby producing variable degrees of stress upon its different parts. But it is manifest that the results above obtained, require to be modified on account of the effects produced by the permanent weight of material in the structure itself.