ficulty would be experienced in passing from the bridge to the abut-
ment; but, even in very flexible structures, this trouble may be in
great measure counteracted by the arched form of the flooring.

NOTE C.

The following is the formula alluded to in the report, which being
an approximate result obtained by developing a series, and suppress-
ing the higher powers, must be applied with caution, and not much
beyond the limits assigned; and in the application care must be taken
not to vitiate the results, by introducing the elasticity of the links in
an ordinary chain. Represent by

\( h \), half the span of the arch;
\( l \), one-half the length of the cables, from the apex to the anchorage;
\( f \), the deflection;
\( a \), the cross section of the cables in square inches;
\( p \), the constant weight of the bridge per lineal foot;
\( \pi \), the weight placed in the centre of the arch and causing its depre-
sion;
\( \delta \), the value of this depression.

We shall then have this approximate formula,—

\[
\delta = \frac{\pi}{4} \left( \frac{f}{ph} + \frac{l}{900a^2} \right)
\]

to express the depression of the central point, due at the same time
to the change of the figure and the extension of the material of the
cables.

NOTE D.

It was the intention to offer, in a note, some cases of this sort; but
the experiment is so easily tried by every reader, that it is deemed
unnecessary to swell the report for that purpose.