

resist compression; and, while definite standards exist for the shape of tension specimens, no such widely accepted standards exist for tests in compression. Before defining such a standard we must know the relation between the size and shape of specimens of different grades and their strength. Experiments to determine their relation for wrought iron have been undertaken at Purdue University by the writer, in conjunction with Messrs. Fletemeyer and Alling, and the results are now offered to the Academy.

There were tested 140 square-ended cylindrical specimens, ranging in length from 1 to 10 inches, an area from  $\frac{1}{4}$  □'' to 1 □'', covering a ratio of  $\frac{Z}{K}$  from 5 to 60. The yield point in compression remained practically independent of the shape of the specimen, and the maximum resistance of the specimen was practically the yield point when the ratio  $\frac{Z}{K}$  exceeded 38 (10 diameters). For stouter specimens, whose  $\frac{Z}{K}$  was less than 38, the maximum load exceeds the elastic limit by an increasing amount, the excess for a given value of  $\frac{Z}{K}$  being the same for different grades of iron, and different area of specimen.

The material was plastic at 77,000 lbs. to □'' with a compression of  $\frac{1}{4}$ .

The writer would recommend that the term compressive strength should mean either the elastic limit or the limit of plasticity, both of which are definite points.

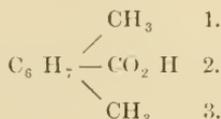
It does not seem that it is necessary to specify any standard shape of specimen for compression.

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#### CAMPHORIC ACID. BY W. A. NOYES.

[Abstract.]

The work done with Mr. E. B. Harris<sup>1</sup> indicates that cis-campholytic acid may possibly be the neighboring □' tetra hydroxylylic acid,



The paper gave an account of work which has been done in the endeavor to prepare this acid. The acid has not yet been obtained, and the difficulties met with have been unusual, but work on the subject is still in progress.

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1. Amer. Chem. Jour., 18, 694, 1896.