the atmospheric pressure within the building to act upon the only yielding part of the structure.

A letter was read from Mr. Edward Alfred Cowper, describing some experiments on the use of maroons as signals on railways.

Signals for
Railways.

The maroons are either small tin cases, or carcases of brown paper, charged with from $\frac{1}{2}$ oz. to 2 oz. of gunpowder, mingled with which are four of "Jones's Prometheans," which are small glass tubes, each containing a drop of sulphuric acid; the tubes are surrounded with chlorate (hyper-oxy-muriate) of potassa, and are each enveloped in a strip of paper.

In the event of an accident occurring, which renders it necessary to give notice that an approaching train should be stopped at a given point, two or more of these maroons are fastened upon the upper surface of the rail by the strips of lead attached to them. The wheels of the engine, in passing over them, crush the glass tubes of the "Prometheans," the sulphuric acid inflames the chlorate of potassa, and causes an explosion of the gunpowder, which is distinctly heard by the engine driver, who immediately shuts off the steam, and puts down the break.

Mr. Gregory.

Mr. C. H. Gregory had permitted several trials to be made with these maroons on the Croydon Railway.

An engine was driven at full speed with a number of empty waggons attached to it, and with the steam blowing off to create as much noise as possible, yet the explosion of even half a drachm of gunpowder was distinctly perceived: he considered the invention to be practically useful.

April 6, 1841.

The PRESIDENT in the Chair.

The following were balloted for and elected: George Thomas Page, and Robert Charles May, as Associates.

"Experiments on the strength of Iron Girders." By Thomas Cubitt, Assoc. Inst. C. E.

Strength of
cast-iron
girders.

This communication gives in a tabular form the results of experiments upon upwards of sixty pairs of cast-iron girders, varying in