THE TECH.

Department Notes.

The Iron Age for March 6 devotes several columns to a description and drawings of a testing machine designed by Mr. A. V. Abbott for Fairbanks & Co., of New York. The machine can apply any stress up to 200,000 lbs., and records both the amount of stress and its effects on the specimen. Accurate registering of the stress is secured automatically; inside the poise which surrounds the scale-beam are two electromagnets and some clock-work; when the beam rises, a steel pin at its extremity dips into a mercury cup and completes an electric circuit, exciting one of the magnets and throwing into operation the clock-work, which moves the poise forward; when the beam falls connection is made through a cup below, the other magnet excited and the poise moved backward, these motions alternating until exact equilibrium exists.

The Manufacturers' Gazette, to which has been added the title of Cotton Spinner and Steam User, has recently changed hands, and is now edited by Thomas Pray, Jr., formerly editor of Cotton, Wool, and Iron.

Prof. Wilson, geologist, of Chicago, has discovered a 38-inch vein of sapphire corundum on the farm of Samuel Herb, near Line Mountain, Northumberland County. A Boston company has purchased the tract of land. This is the second discovery of this kind in America.

The superintendents of the various life-saving stations have been instructed to furnish, for scientific purposes, samples of the so-called "singing-sands," wherever found. These sands get their names from the peculiar sound which they give forth when walked upon or disturbed in any way. This property is possessed only by dry sand found between the water line and extreme high-tide marks along the sea-coast and the shores of the great lakes. Already twenty-six samples of this sort have been received, indicating its existence in as many different localities in this country. Heretofore these singing-beaches have only been known to exist in two places, one in this country and the other in Europe.

The lowest barometric depression ever recorded occurred in Scotland, Jan. 26 and 27. At Edinburgh a reading of 27.427 inches was made, while previously the barometer has rarely fallen below twenty-eight inches. This extraordinary atmospheric disturbance was not attended by a storm of corresponding severity, though there was a heavy gale throughout Scotland.

No mention has ever been made, says an exchange, of the difference in diameter between the cylinder of a steam engine hot and the same when cold. In small engines this change of dimension would not be great, but in large ones, and with the high pressures now carried, it cannot be ignored. A cylinder seventy-two inches in diameter has 4,072 square inches area; supposing it to expand only one eighth of an inch, which is quite within bounds, it is then 4,085 inches in area, thirteen square inches larger. When this is converted into foot-pounds and pressures, it represents an item of no small importance. Since all calculations are made upon the basis of the bored diameter, it follows that it cannot be correct, and that the power is greater by the amount of the relative expansions in the cylinder diameter at extremes of temperature. A thorough study of the matter would be of great interest.

We advise our readers to look over the "Literary Notes" in the Chronicle, if they would find a good compendium of the latest publications. The criticisms are discriminating and good.

The American Engineer has in its last few numbers a couple of continued articles which are well worth the attention of the civils. They are, "Notes on the Construction and Equipment of Narrow-Gauge Railways," and "Foundations for River Bridge Piers." The Railroad Gazette, beginning March 7, gives many particulars about the Niagara Falls Cantilever Bridge, accompanied by drawings of many of the details. The same number also contains an article upon the merits and faults of cantilever bridges.