Department Notes.

That the subject of the speed of trains has not yet lost its interest is shown by the fact that a recent paper, by Mr. Foxwell, on the speed of English express trains, has been extensively copied here and in England. In connection with this subject we would remind our valued contemporary, the American Machinist, that we did not deny that the Chicago expresses were the fastest long-distance trains in this country, but simply that the Pennsylvania’s “Limited” was the fastest of them.

We are indebted to Cotton, Wool and Iron for a flattering notice of THE TECH. We can return the compliment by saying that Cotton, Wool and Iron is the best paper of the class published.

Mr. Theo. E. Schwarz writes from Denver, Col., to the Engineering and Mining Journal about the special field of work of the mining engineer. He says that the requirements of a competent mining engineer are: 1st. A constitution able to stand hard work and privation; good digestion, muscular development, and eyesight. 2d. A scientific training and education, such as is now provided in the mining course in the leading mining schools of this country, namely, the Massachusetts Institute of Technology and the Columbia School of Mines. 3d. Not less than five years’ practical experience in the leading mining sections of this country, including work as prospector, common miner, mine foreman or shift boss, and superintendent. This should include experience in working both bedded and fissure-vein deposits. 4th. A character prominent for honesty, self-control, pluck, and perseverance. Mr. Schwarz adds that the mining engineer who lacks any one of these four requirements is not qualified to practise his profession.

The standard gauge, four feet eight and a half inches, was the first gauge adopted for steam railways by Mr. Stevenson, in England, and is the one in most general use, although others have been since experimented with. The history of the manner in which Mr. Stevenson hit upon four feet eight and a half inches is said to be as follows: When about to build the first railroad the question of how wide the rails should be apart troubled him somewhat, and he took a rule and measured an ordinary wagon track, which proved to be four feet eight inches wide. The tracks were laid this distance apart, but when the cars were placed on the rails it was found that half an inch would have to be added to the width in order to allow for the lateral motion of the wheels, hence the standard gauge of four feet eight and a half inches.

In the American Engineer, beginning with Jan. 18, are a series of papers descriptive of the “Strain Meter” of Dr. Fränkel. Its object is the measurement of strains, either of tension or compression, which the members of a structure undergo when loaded in any given manner. The strain meter produces a regular diagram, on which the abscissas represent time and the ordinates, the variations in length of the piece under stress. The diagram shows the whole course taken by the strains on the structure, and their mode of variations during any required period. The author states that it is capable of indicating strains to .003 mm.

The Railroad Gazette for Jan. 25 contains a description of Dujour’s system of moving and locking switches. By this system, with one movement of the main bar, the switch is unlocked, moved, and then locked again in its new position,—the advantage of the system consisting in the use of only one lever and main rod connecting the switch with the switch-tower.

The new synchronous multiplex system of telegraphy, by which seventy-two messages may be sent over one wire, is highly spoken of and promises to revolutionize the present methods. Mr. Patrick B. Delaney, the inventor, has been at work on this for several years. It is probable that the students will have an opportunity to examine the method of working of the system soon before the Society of Arts.

A bill has been brought before the House to introduce the use of hand tools in the public schools.