

various makers were made, under the direction of the Geological Survey of Pennsylvania, in a small shaft furnace, in which it is claimed a heat sufficient to melt steel was maintained. Unfortunately, the experiments were too much restricted, both in time and number, to give reliable results; but, though limited, they are a valuable contribution to our knowledge of fire-brick, as far as their action in the presence of incandescent fuel only is concerned. Although the tests did not in any case last longer than two hours, all the bricks experimented upon were cut or cracked, some standing much better than others.

The necessity of a better material for metallurgical processes is surely no less important now than in 1875-76, and this paper has been prepared more to revive interest in the subject than to present any novel statement, or to enter into an investigation of the proper chemical and physical composition of fire-brick. The manufacturers of fire-brick have shown a commendable desire to meet the demands of metallurgists as to shape and form, and considerable attention has been bestowed upon composition; but most of these experiments have been limited by individual enterprise and capital. A thorough investigation of the physical and chemical features of fire-brick, in connection with a consideration of the circumstances under which they are to do duty, will undoubtedly prove of immense value to practical metallurgy.

**Electric Lights.**—In concluding his report upon the different systems of lighting which were exhibited at the Paris Exposition Du Moncel says that the systems of incandescence are already numerous, and doubtless many others will soon be added. Most of them differ from one another only by the composition of the incandescent carbon and its mode of fabrication. It is impossible to base any correct judgment upon the more or less brilliant aspect of the lamps, for, as they are fed by electric generators of very different intensities, those which have the strongest currents naturally furnish the most brilliant and the whitest light. It would therefore be imprudent to pronounce in favor of any single system until a serious examination and comparison has been made by a commission of disinterested scientific men. There is, however, reason to hope for a satisfactory solution of the problem of household illumination by electricity.—*La Lumière Electrique.*