IRON MANUFACTURE.

MATERIALS OF CONSTRUCTION.

In all structures affecting the daily concerns of life, to the strength of which thousands of human beings entrust their safety, the materials composing them must always be a subject of deep interest, and therefore it is of vital importance to disseminate as widely as possible a correct knowledge of their physical characteristics. And in this "Iron Age" upon which we are entering, much will be accomplished when the community realizes that in regard to iron at least, a "little knowledge is a dangerous thing," an aphorism applying with peculiar force to bridge-constructions. The first lesson to be learned is, that iron is a material, the qualities of which are as variable as the different localities of its production, and therefore that an iron bar is not necessarily as good if made in one place as another, simply because it is iron. Iron may be very good or very bad, or it may have all intermediate degrees of quality, and yet, to an untrained eye, a sample of the two extremes would seem to be precisely alike. It must be understood that iron is a material the most sensitive to treatment known in the constructive arts. The least, and often infinitesimal variation in the fuel, ores, and working, will result in many variations of quality, and all are more or less useful for some purpose or other. It will be the effort of the writer, in as clear and untechnical language as he can command, to point out the leading characteristics of this metal, particularly in its application to bridge purposes, and he will be