

Mr. Mushet presented some specimens of malleable iron, in his opinion particularly adapted for railway purposes. The feature peculiar to this iron, is the omission of the refining process in its manufacture. The valuable properties of malleable iron being fibre and hardness, Mr. Mushet considers that these are but imperfectly secured by the present process ; iron, as at present generally manufactured, receives the fibre from repeated heating and rolling. But fibre thus acquired is acquired at the sacrifice of hardness. The fibre of malleable iron may be injured by over-heating, by adding in the smelting furnace ores rendering the iron cold-short, or by the use of cinders, which, when in excess, cause the fibre to crystallize and produce brittleness. Some irons, however, are so exceedingly fibrous that they admit of a limited use of cinders without deterioration. By omitting the refining process, a greater mass of fibre can be produced than by any other means, and this fibre, in consequence of the iron not being exposed to so severe a degree of decarbonization, is stiffer and harder than that acquired by repeated heatings and rollings. The iron used for railways should be from good grey pig iron, as the source from which the hardest and strongest fibre in malleable iron is derived. The use of cinder pig should be excluded, on the ground that the quantity and quality of the fibre is injured, and if in the state of grey iron, its fusibility is so much increased as to occasion great waste in the puddling and re-heatings.

Iron for
Railways.

March 6, 1838.

The PRESIDENT in the Chair.

W. Romaine and W. Bazalgette were elected Graduates ; and James Pim was elected an Associate.

On the Evaporation of Water from Steam Boilers.

By Josiah Parkes, M. Inst. C. E.

In this paper, the author has brought together all the well-authenticated documents relating to the power of coal in producing steam, and thus exhibited, at one view, the present state of this department of science.

Evapora-
tion of
Water.

In the course of a series of experiments, undertaken with the

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