

## Agricultural Intelligence.

### THE STEAM PLOUGH TRIALS AT YORK.

The following Official Report to the Council of the Yorkshire Agricultural Society, on the recent trial of Steam Ploughs and Cultivators, will not be without interest to our readers generally. Mr. Morton, who conducted the trials, is a man peculiarly fitted for such a work, having devoted for many years special attention to farm machinery. :

The field set apart for the exhibition of steam ploughs and cultivators, though perfectly well fitted for showing the machines at work, being large enough for three or four hours' trial of all the different implements upon the ground, and providing a furrow upwards of 300 yards in length, is yet very ill adapted for the illustration of steam cultivation. It is for the most part of an extremely light soil, and thus presents none of that difficulty as to either the labor or the quality of horse cultivation which proves on stiffer land the advantage of applying steam power to the cultivator or the plough. And besides that, there extends across the field a narrow band of stiff clay, which requires a double or triple power to crossit, so that the engines employed had to be worked throughout the furrow at much higher pressure than was needed, except at particular moments. A spectator had thus no sufficient opportunity given to him of ascertaining aright either the advantage or the cheapness of the cultivation of the land by steam. He had, however, ample opportunity of seeing how the machines of Fowler and Howard were worked; and his own experience in cultivation elsewhere might enable him to judge of the advantage they possess on the stiff soils of the country.

It is indeed impossible to over-estimate the advantage of steam cultivation on stiff clay lands. They are dependent on proper cultivation even more than on the application of manures for their fertility, for they are already full of the food which plants require if we only could get it. To this end, they need to be broken up and exposed throughout their depth to the free access of air and weather. But there are comparatively few days during the year in our climate when this can be done by horse-power, for they are generally either baked by the sun, so that horses cannot pull the plough or cultivator through them, or they are so softened by the rain that the trampling and the sliding of the team and tool will do more to close the land than open it. We want a power which shall make the full use of the short intervals when such land is in proper condition for tillage operations, and which shall at the same time avoid the evil of poaching the land above and harden-

ing it below, which in the horse cultivation of clays is too often seen. A four-horse team and plough weigh more than 40 cwt., and all this goes trampling and sliding from end to end of the field that is being ploughed, over every 10 or 12 inches of its width; and thus of course a floor is formed beneath the soil, hindering drainage, which is the greatest improvement of which clay lands are capable. We want a tool not weighing more than 4 or 5 cwt. for every foot in width worked by it—carried on wheels so as not to close the surface over which it travels, and driven by a power which shall not press upon the land that is being worked.

All this we have in the steam-drawn ploughs and cultivators that were seen at work yesterday. The ploughs employed weigh not more than 5 to 7 cwt. per foot of width, and both are carried on large wheels at wide intervals, thus traversing the field but once to every 4 or 6 feet width. The engines driving them either travel on the headland, as in Fowler's apparatus, or they may stand altogether out of the field, as in Howard's case. In both cases the tools can be drawn with wonderful effect through sun-baked clay which horses could not touch; and (supposing the land to be fit for horse work) in both cases the mischief done by drawing a heavy tool across the land that wants loosening and cultivating is reduced to a minimum; while for speed of work in order to the full use of the short times when clays are fit for cultivation, the advantages of steam power are in both cases beyond a question.

We saw the speed of steam cultivation well illustrated yesterday, and the superior quality of steam cultivation was also sufficiently well shown, for the patches of clay land in the field were ploughed and cultivated, and the lighter soil was thrown about, so as no horse-power could have done it.

The cost of the work cannot be illustrated by a few hours' trial; but there is now experience, both of Fowler's and Howard's apparatus, over years enough and acreage enough to prove that their better cultivation is generally attained at much less cost than is incurred in horse labor. I have walked over many thousands of acres cultivated by both, and having been allowed to inquire particularly into the history of steam cultivation over many score of farms in all parts of the country, I am able to speak with some confidence on this point. It will be found that taking every particular of the expense into the account—wages, fuel, breakages, and tear and wear, and interest of capital—good ploughing may be done by steam for from 8s. to 10s. per acre, and one-way grubbing for from 5s. to 8s. per acre, which under horse labor would have cost 12s. to 18s., and 6s. to 10s. respectively for much inferior work.

There is, I believe, no one, unless he be interested in the success of one or other of the rival firms engaged in the manufacture of steam ploughs and cultivators, who will not greatly prefer thus confidently to report the unquestionable