

The Farm.

STEAM CULTIVATION.

England, with fewer land owners than the State of New York, and with nearly all her farmers working leased land, has about eight hundred steam plows and cultivators in active use—cultivating not far from three hundred thousand acres; and the system of steam cultivation has there been an established success for a dozen years.

The story of the rise and progress of the improvement is really a wonderful one, and as I read of the impediments to its general adoption, through the long list of small fields, uneven surface, crooked fences, and crooked landlords, I long to see it gain a foothold on the prairies of our Western States, where every circumstance that could promote its efficient application seems ready-made to its hand. Thence, I am sure, by a reversal of the old rule, the course of its empire would eastward wend its way.

In the Journal of the Royal Agricultural Society for 1867, three hundred and thirty pages are devoted to the reports of the committees that had been detailed "to inquire into the results of steam cultivation" in use by one hundred and thirty-five farmers and stock companies of England. From the conclusions which they deduce from their investigation, I extract the following:

"In nearly all the cases reported, it will be seen that the expenses of cultivation are very much reduced, and yet that a larger amount of produce is said to have been realized.

"Not only are the operations themselves better done, quicker done, less expensively done, but all kindred and collateral movements have had imparted to them a speed and 'whirr' characteristic of steam; men acquire the habit of doing the day's work in the day, and of not leaving it for the morrow. The day's labor, too, on a steam farm, represents more work, with less distress to the physical power of the laborer, and better remuneration. Steam is working a revolution, slightly manifested as yet, so that we can speak only of tendencies in farm practice, and in the character of the rural population; they are being trained for the age of machinery in agriculture.

"Before steam can be as generally used for tillage as it is for thrashing, the fields below ten acres must be enlarged, and areas of thirty and forty acres become more the rule than the exception."

"In most cases, an increase of produce, in some instances as much as eight bushels per acre, has resulted from steam cultivation. We may state, as our general conclusion, that steam tackle, whether of Fowler, Howard, Smith, or other makers, is now so far perfected and settled in form and details, that it might be classed among old-established, standard farm machinery, and no longer among the novelties of the day."

"We find, as the result of experience, that which we already anticipated theoretically—namely, that the increased depth of surface, and the absence of pressure, greatly increase the absorbing powers of

the soil, and consequently assist the action of the drains."

Mr. Clarke, a member of one of the committees, in a lecture on steam cultivation, delivered before the Central Farmers' Club, in December last, said (with reference to a trial of steam apparatus at the recent show of the R. A. Society):

"Now some persons may think it astounding to talk about from fifty to seventy acres a day being cultivated. I admit that it is very astounding; but I also assert that I saw the thing done—and there are other persons also who saw the thing done. I may tell you, too, that the apparatus was not in a perfect state; it was one of the earliest trials made of that particular arrangement. I have not the slightest doubt that the makers of steam plows are prepared, though I have not their authority to say so, to do, in answer to a challenge, an extent of land in a day which would astonish every one present. I have not the slightest doubt myself, that seventy acres—I should not stare particularly if one hundred acres could be cultivated, provided the work was tolerably light."

In a discussion by the members of the Royal Agricultural Society, it was declared that the advantage of steam cultivation amounted, on average soils, to at least eight bushels per acre in the increased produce of the grain crops; that arable culture is by means of it annually becoming cheaper and better; that the drainage of clay soils is facilitated; that even when coals are twenty shillings (\$5) per ton, the power obtained from sixpence (12 cents) worth of them is equal to the day's labor of a horse—and that the system, wherever it is adopted, is improving all the classes interested in agriculture. —*Handy-Book of Husbandry.*

HOW TO APPLY MANURES.

Under certain circumstances the best storage place for the manure of the stable is the field where it is to be used. If the land is so situated, and the soil contains a fair amount of clay, and is in such condition that the water of heavy rains will wash the soluble parts of the manure, not off from, but into the ground, the surface of the field is the best place for it. We can in no other way distribute the nutritive parts of the manure among the particles of soil so thoroughly, as by allowing them to be washed in among them by falling rains. The only loss sustained in this practice will be by a very slight evaporation of ammonia—very slight, because the formation of volatile ammonia will almost entirely cease when the manure is so spread as to become too cold for rapid decomposition. The soluble ammoniacal salts, and the soluble earthy parts, will be washed into the soil, of which the clay and decomposed organic matter have a very strong absorptive action, and which will hold all fertilizing matter that may coat its particles—very much as the fibre of cloth holds the coloring matter of dye-stuffs. To continue the comparison, the coating of the particles of soil is not a "fast color," but is removed by the water of the sap in the roots of plants, and is appropriated to their use.

The recommendation to spread stable manure directly upon the land as soon as it is made, or as soon as it can be hauled out, applies only to such soils as are in a condition to receive and retain its