Steam Ploughing in New Zealand.

We received the following letter from Mr. H. Redwood, giving an account of the progress he is making with his steam plough at his farm in the Wairau. The account will be gratifying to all our readers who take an interest in the success of what is really an important colonial enterprise :—

Wairau, July 19, 1864.

We are again very busy ploughing up another 150 acres of new land. We find, after the rains which we have had, that the plough takes less steam by 20 lbs. to the inch, and we are getting on much faster. We have ploughed eight acres to-day in 9½ hours, quite seven to eight inches deep, and for the quality of the work, as compared with horses, it is infinitely superior. I have two four-horse teams ploughing the same land, and the land ploughed by steam is more shaken and crushed, and by that means will be more easily prepared for a crop It appears to be the chief aim of ordinary plough makers to so arrange the plough that it shall leave the furrow-slice in as neat and pretty a shape as possible, and by so doing the plough, no doubt, takes less power to pull it, but, to prepare the land properly for the seed, it takes much more harrowing, &c I consider there is at least 10s. per acre difference in the breaking up between the two plans.

I never saw any ploughing so good as what we are now doing with the steam plough. I am perfectly delighted with it. The way every part of the machine stands the ordeal is surprising, for, by the end of this month, we shall have ploughed 500 acres, and 400 of that will be *new* land, without any flax or roots having been grubbed out of it, and this is a very fair test of how the thing is going to stand. Our rope appears very little the worse; it certainly is a wonderful production; it is not thicker than a common wax candle, and there is constantly the strain of thirty or forty horse-power on it. It has never broken yet, nor shown any sign of distress.

Where the land is suitable for the steam plough—and it can work almost anywhere, except on stony ground, and there of course, the first time over, you would break a good deal—there is nothing like it for getting on with the work. Then, again, with a steam plough you can do your work at the proper time; for in summer, by a little extra pay for overtime to the men, you can get any quantity of work done, as the labour attending it is of the lightest description, if I except the steersman on the plough, who requires to be a strong man; but even his work is comparitively easy, except at the ends of the furrows, where he must handle the plough quickly, as a great economy of time is effected by turning quickly, and keeping the plough running. We can now turn, on good level land, in twenty seconds.

I am quite certain that, before many years, steam ploughs will become general. Any large farmer who does not appreciate steam ploughs, has a great lesson to learn. But it takes a long time to wear away prejudice. It is a puzzle to imagine what some men are made of. We have farmers here, living within one mile of us, who have never been to have a look at the plough, although we have been at work for the last three months.

I find a cord of wood will plough eight acres—I mean breaking up, or the ploughing of the land for the first time. Of course the subsequent ploughings will require something less. It is difficult to imagine that any very great improvement can be made in these ploughs, and I believe it is the opinion of the principal makers that steam ploughs must stand or fall by what is before the public The engine probably might be lightened by substituting steel for iron; but if it was much lighter, it would not bear the lateral strain that is on it when the plough is approaching it. My engine weighs about fourteen tons, and, when the ground has been slippery, I have seen it pulled sideways a foot, that will convey to you some idea of the strain the parts will bear, and the power we have at our disposal for the cultivation of the wilderness. August 2.

P.S.—Since I commenced this letter, on the 19th of last month, I have ploughed seventy-five acres of new land, without breaking sixpence worth *Nelson Examiner.*

Hop Culture in England.

We make the following extract from a prize essay, by John P. Smith, of Worcester, which has just been published in the English Agricultural journals It will be read with interest by our hop-growers

A southeastern aspect affords, in my opinion, the best situation for a hop garden, and if it be well protected from the west winds that prevail during the autumn, so much the better, as great mischief is often done by wind. Due care must be taken to adapt the planting to the peculiarities of the soil. The Golding hop will be found to succeed best on dry friable soil, with a gravelly or rocky subsoil, such as we find in the hilly districts of Middle and East Kent, whilst Mathon White, and Grapes, prefer a stronger soil, approaching to clay; the former variety flourishes on the deep land in the vale of the Teme, and the latter in the Weald of Kent and Sussex, which is mostly strong clay soil. Another variety, Cooper's White, a good sort, but delicate, is best suited for strong loam.

We will now assume that a suitable field—one that has been thoroughly drained—has been selected, and the preference given to an old piece of turf. In that case I would recommend that the land be trenched two spits deep, the top spit being kept uppermost, with the turf downwards. When the digging is finished, the surface should be harrowed, and rolled down as fine and level as possible, ready for setting out. The planter must next determine on the arrangement of the rows, whether on the angle or on the square, and the distance from plant to plant. The usual method in Worcestershire and Herefordshire is to lay out the rows 7 or 8 feet apart, and set the plants 2½ to 3 feet distant in the rows. If your land be good, and likely to be highly farmed, a uniform distance of 7 feet square may be recommended. Good cultivation will ensure a large quantity of bine, and a sufficient quantity of sun to bring the fruit to perfection, whilst at this distance you have more room to cultivate without injuring the bines.

If this plan is adopted, you must prepare 889 small sticks, a foot to 18 inches long, for every acre, that being the number of hills which an acre will take at 7 feet square First square your field, and then commence in the centre, working right and left; you will thus be more likely to be correct than if you begin on one side.

Your field being truly set out, you may prepare for planting, if you plant bedded or yearling sets (which are far preferable to cuttings), a man should take a spade, and remove the soil from two sides of the stick, the opening being 2 inches wide at the top, and 4 to 5 inches at the bottom, which should be deep enough to let the roots lie straight. Two strong bedded roots are sufficient for a hill; but if not strong, three may be better Care should be taken to bring the head of each root as close to the stick as possible; some good fine soil should then be put to the roots, and made firm with the foot For a plantation of 20 acres with suitable casts and cooling rooms to dry and cool the crop in one month, for a first-class growth, the following varieties are recommended :—5 acres of Cooper's White, or 3 Cooper's and 2 Jones', 6 acres Mathon's; 6 or 7 acres of Goldings, and 2 or 3 grapes but this distribution of sorts must, in a measure, be governed by the quality of the land, that variety being most largely planted which is best suited to the soil The crop ought to be secured in three weeks or certainly not more than a month, and it is most important to have an early sort, such as Cooper's White or Jones', to commence with; then will follow your Mathon's, then the Goldings, and lastly the grape, a hardy sort, which will hang well for the last picking Jones' are serviceable to use up old poles The writer has seen a ton an acre on 7-feet poles If, as is mostly the case in Sussex, one variety only be planted, you must begin to pick before your hops are ripe, or have a considerable proportion blown before you can finish

If the planter should determine on a piece of tillage, I recommend him to plough 10 inches, and subsoil as deep as he can. The ploughing completed, he will proceed the same as if it had been a meadow, with this exception that after the sticks are truly set, he should dig holes two feet in diameter and two feet deep, placing the top or best soil on one side, and the bottom soil on the other side of the hole obliquely, so that the heaps may not interfere with replacing the sticks when the holes are refilled. Good dung, or rather a rich compost, should be wheeled on, and a fork or shovelful mixed with good soil from the surface This being finished, you must re-adjust your sticks, and when your soil has had time to settle, you may proceed to plant in the manner before described. On no account bury your manure Should the weather be favourable, and your roots get a start, they will require two poles to each hill, six to seven feet long, and if the season be good a crop of two or three cwt. an acre, may be grown. If cuttings are planted you lose a year.

A New Method of Steeping Flax.

Dr. Hodges read the following report at the meeting of the Chemico Agricultural Society of Ulster, Ireland, August 5th, which as promised at a former meeting, Mr. Friedlaender had forwarded to him :—

There are three most important points to be observed by the flax cultivator: 1st, the selection and proper cultivation of the soil intended for the reception of the seed; 2nd, the steeping and bleaching; and 3rd, the scutching.

1. Cultivation.—About the first point I shall say little, as it is my opinion that we can only give hints to the farmer in his selection of the proper soil, and in his treatment of it before sowing. Nearly everything depends upon his own intelligence. I may, however, mention that I myself have found the best preparation for the crop is to plough twice in autumn—the second time across the first, and then to plough again in spring to the depth of three inches or thereabouts. I am sorry, however, to be obliged to confess that I have never seen flax land prepared in a more careless manner than it is here in Ireland; and although the flax plant is one for which the soil requires the most careful preparation, the Irish farmer seems to imagine that he can raise a good crop on land which has received very little cultivation, previous to the sowing of the seed. The consequence is, that the flax sometimes looks very well when in the field, but when it comes into the scutcher's hands is found to be inferior, both in quality and yield, to flax grown on land carefully managed.

2. Steeping.—Of late years many different plans for the steeping of flax have been proposed and tried; none, however, have met with success. Schenck's and Leadbetter's, as well as others, failed, simply because they were not suitable for general adoption. Since, then, those methods of steeping which compensate for the absence of soft water have been unsuccessful, it is obvious that the flax cultivator whose land is situate in a district in which soft water is either altogether absent, or at least very scarce, must, owing to his inability to steep his raw material properly, either bring to market a very inferior article, or hit upon some plan of steeping which shall enable him to produce flax good enough to compete with that from districts where the water is soft, and well adapted for steeping. Such was exactly my situation. I have been for some time steeping flax in a district in Silesia where there is scarcely anything but spring water. I was consequently forced, as it were, to devise some plan to remedy the evil. After a good many trials, I am glad to say that I was successful; and since there must be many farmers in Ireland who are at present situated as I was, I shall be most happy to offer my experience for their benefit. The following is a short account of the method I have adopted :—The pools I used in steeping were 36 feet long, 15 feet broad, and from 3 to 4 feet deep. At about 10 inches from the bottom of each of them a false bottom, constructed of laths, was placed, and at the same level a pipe was fitted, by means of which the pool could be drained of all the water except the ten inches below that point. The flax to be steeped, which was tied in bundles, was placed root downward upon the false bottom, and kept in the vertical position by the pressure of the adjacent beets. The pool being packed as tightly as could be managed by the hand, and containing about three tons of raw material, was first weighed, and then filled up with water, which was allowed to remain for 24 hours, when it was drained off by means of the pipe, and the flax covered lightly with straw. In a short time fermentation commences, and the pool must be carefully watched till it is finished, which is generally in two or three days. At the expiration of this time the pool is re-filled with water, and the flax thus cleaned of all its gum. In a short time after this has been done it is taken out of the pool and spread upon the ground, where it is allowed to remain the same length of time that it has been in the pool. This process I have found very advantageous, as it enables me to produce either warp or weft flax according to demand, the difference in strength being proportionate to the length of time passed in the pool

3. Scutching. Although very much depends upon the proper *steeping* of flax, yet even more depends upon its proper *scutching;* for, no matter how well the flax be steeped, if it be badly scutched, it decreases very much in value, and the yield is also very much diminished. The great desideratum, then, is a machine which will scutch both well and cheaply. Such a one is, I think, to be found in Freidlaender's "Double Scutching Machine." This machine possesses very many advantages; it cleans the flax more easily and quickly than any other machine; and,