

the gear which drives it. By this mode of drilling, the advantage of the "broad cast" system is obtained (equal distribution), as the rows may be close together, and the grains as thin in the rows as may be desired. (1)

The crop should be hoed, as soon and as frequently as possible, with a horse hoe. If the seed has been sown early, this should be done in the autumn, as it causes the plants to tiller and occupy the whole ground before winter sets in. It is essential to the success of thin seeding to keep the land perfectly free from weeds during the growth of the crop.

Now, what are the advantages of Major Hallett's system? A bushel of pedigree wheat (original red) produced from single grains, planted 12 inches x 12 inches, contains about 460,000 grains, while a bushel of ordinary wheat contains 700,000 or more grains. Therefore, in two crops consisting of exactly the same number of grains, the crop from thin seeding would be upward of 70 bushels against 46 bushels per acre. Again, a bushel of pedigree barley, produced from grains planted singly, contains 390,400 grains, while a bushel of ordinary barley contains upward of 550,000, or, in two crops of equal numbers of grains, the one would be 55

but on the showing, we have a possible saving of \$77,500,000 in seed only for the wheat crop alone. One dollar and a half per head of the population is worth attention.

The roots of wheat sown in August become by the middle of October so developed as to render it quite safe from lifting by the frost, and attacks of wire-worm would be almost unknown. If winter wheat were all drilled by the 10th of September, the entire fall would be at the farmer's disposal for clearing the land and sowing spring crops early. The crop would not become winter proud, or be laid by the summer rains. The harvest would be from two to three weeks earlier. The harvest being over at least a fortnight earlier, would be of immense advantage in clearing land. Seasons are frequently most unfavorable to late sown cereals, but they are scarcely ever so to early-sown ones. On well-farmed lands, on the common practice, the average contents of the wheat-cars must be from 20 to 30. Were it grown on Major Hallett's system, the average contents would be, at the very least, from 40 to 60, and far more likely, from 60 to 90; for under such a system, so small an ear as one of 40 grains is quite the exception. And this increase of the contents of the ears



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bushels, the other 39 bushels, per acre. Thus, in the increased size alone we get and increased crop of forty to fifty per cent.

The saving of seed from such a practice is immense. The wheat area of the United States is not less than 40,000,000 acres, and the average seeding is very much higher than two bushels per acre. But, if these figures be taken as a basis, we shall not err on the wrong side. To plant grain at the rate of one berry to each square foot would be equal to 43,560 grains per acre of 4,840 square yards, or less than two English quarts. This shows that the farmers of the United States have it in their power to reduce their consumption of seed-wheat from 80,000,000 bushels to 2,500,000. Good seed-wheat ought certainly to be worth a dollar a bushel out West, and is worth very much more in the East;

(1) Thin sowing, on land in good condition, no doubt produces the heaviest crop. The danger is, that if any disease attacks the wheat, the luxuriant thin sown always catches it fearfully, while the thicker sown only suffers moderately. The ordinary drill will plant 2 pecks to the acre with regularity, but *Newberry's Clover* would drop a gallon per acre if required. I have seen in Ontario a dozen pieces of wheat covering the ground by the end of September with only a bushel to the acre. In Quebec, I should not like to sow less than 6 pecks, I confess. Spring wheat not less than 12 pecks—it has no time to tiller. A. R. J. F.

would be obtained without any diminution of their number; the crop, in fact, would be doubled where now fairly good farming yields 30 bushels to the acre. These promises are not illusions, since a good many men in European countries, and in the United States also, have accomplished great results in agriculture by the application of commonly accepted principles of science. Major Hallett has himself grown 216 bushels from three acres with one bushel of seed, or 72 bushels to the acre; and over a whole field 82 bushels of barley, weighing 57 pounds to the bushel, from only two gallons of seed per acre.

In reference to the point of time of sowing, it must be borne in mind that the rate of growth for wheat during the different months in England is as follow:

Wheat sown on September 1st	comes up in	7 days.
“ “ October 1st	“ “	14 “
“ “ November 1st	In a mild autumn,	21 “
“ “ December 1st	“ “	28 “

Taking this as the relative rate of wheat-growth, when it is up, then wheat which is up on the 1st of September makes in the first fifteen days of that month a growth equal to that of the whole of October; in the next ten days, a growth equal to that of the whole of November; and, in the last five days of September, a growth equal to that of the