

manured by top-dressing with well-rotted manure after the last plowing; about two acres was manured before the last plowing, the manure being plowed in. Then all was harrowed before sowing, and the wheat was drilled in at the rate of  $1\frac{1}{2}$  bushels per acre. The result was that where the manure was plowed in the wheat was decidedly the best, so much so that one of my neighbors who cut it for me with one of Kirby's reaping machines, said it was the stoutest wheat he had worked in during the season.

I think the result was not such as writers on the subject generally expect, as top-dressing wheat seems to be the advice given by most persons when it refers to raising wheat. I am willing to say that such a result was not anticipated by me at the time; if it had been, I should have managed differently, as I manured only about one-quarter of the piece in that way. The ground being light and warm, it was not rolled into the bottom of the furrow and covered deep, but merely rolled between the furrows, so that when harrowed in, it was not very deeply covered, but probably better mixed with the soil than when it was harrowed only.

Now I wish to know if such results are common with farmers on such soils, or is this an accidental occurrence, which would not be likely to occur again under the same mode of treatment. From what I have observed in this experiment I should prefer to manure before the last plowing, so that with the plow and harrow both it would be better mixed with the surface soil than it would by the harrow alone, thereby getting a better crop in return, especially on a light gravelly soil. How it might prove in a clay soil I do not know; perhaps the result might be different. The early part of last winter was unusually hard on wheat, as the ground was frozen hard, with little or no snow, and when snow came the wheat on the ground looked unusually brown and withered.—J. TALCOT in *Country Gentlemen*.

#### TRENCHING.



THE ordinary preparation of the soil for field crops, as performed by most farmers, is not sufficient for the successful and profitable cultivation of the garden and the orchard. In former years, cultivation, as generally practiced in this country, was of the most superficial character. It was not until the European gardeners and vine-growers settled among us that a better system of culture was introduced.

Our most observing farmers and gardeners, seeing the great benefits resulting from a systematic deepening of the soil, have adopted it to a considerable extent, with the most gratifying results. No good cultivator now expects the most profitable returns from the market garden, orchard or vineyard, without trenching or trench plowing the soil.

In our country we are very subject to summer droughts, and as we advance westward, owing to causes that are easily understood, this evil increases. To a considerable degree, the deepening of the soil averts the effects of drought; and in retentive soils trenching greatly facilitates the drainage of the excessive moisture. These alone are important considerations, yet they constitute but a part of the advantages of a deep, well prepared soil. The root plants seldom extend much below the surface that has been broken and disintegrated by the plow; hence they are exposed to extreme and sudden changes. A soil that is worked and thoroughly pulverized to a depth of twenty inches, affords more than double the *pasturage* to the roots of growing crops, that a soil does that is only broken up to the depth of ten inches. A deep well pulverized soil too, admits of circulation of air to the roots of growing crops, which is essential, and the amount of moisture that is thereby condensed and added to the soil, in a dry season contributes in no small degree to the vigorous and healthy growth of the crops.

The experiments of Jethro Tull, more than a hundred years ago, and more recently practiced by the Rev. Mr. Smith of Lois Wedon, have contributed greatly to the knowledge of the proper system of cultivation; although their experiments were confined more to a system of surface tillage, by which the particles of soil are constantly changed, securing thorough disintegration and aeration. Added to this the deepening of the soil in our climate, we arrive in that line to the perfection of cultivation.

Trenching is either accomplished with the spade or the trench plow. With the spade the work can be most thoroughly done, though at somewhat greater cost; yet the most successful vine growers in the West prefer to trench in that way. To trench an acre of ordinary loamy soil three feet deep, as some practice, it will cost from \$70 to \$100, and at the present price of labor perhaps something more. At this cost many would be deterred, although for many kinds of fruit it would prove in a few crops a pro-