AGRICULTURAL.

WHEAT.— Concluded.

MODE OF OBTAINING NEW VARIETIES.

To procure new varieties of wheats, (says Ir Loudon,) the ordinary mode is to select rom a field a spike or spikes from the same stalk which has the qualities sought for, such as large grains, thinner chaff, stiffer straw, a tendency to earliness or lateness, &c.; and picking out the best grains from such ear or ears, to sow them in suitable soil in an open, airy part of a garden. when the produce is ripe, select the best ears, and from these the best grains, and sow these ; and so on, till a bushel or more is obtained, which may then be sown in a field apart from any other wheat. In this way many of the varieties of the common winter wheat have been obtained. Other varieties have assumed their distinctive marks from having been long cultivetad in the same soil and climate, and take local names, as the Hertfordshire red, Essex white, &c.

Marshall (Yorkshire) mentions a case in which a man of accurate observation, having in a piece of wheat perceived a plant of uncommon strength and luxuriance, diffusing its branches on every side, marked it, at harvest gathered it separately, and thus introduced a new and superior variety.

TO RAISE WHEAT AFTER CORN OR POTATOES.

Jonathan Townsend, of Andover, Connecticut, gives the following directions for obtaining good crops of wheat, preceeded by Indian corn.

'Select a piece of ground suitable for Indian corn and winter grain ; spread evenly twenty common cartloads or upwards of stable and yard manure to the acre ; plough it just three inches deep and no more ; harrow lengthwise of the furrow ; cross mark for the rows, three and a half feet for the small, or four feet for the large kind of corn ; let the corn be properly tended, by keeping the ground loose with the plough and hoe and free from weeds ; and if the season is not very unpropitious, you may calculate on a large crop. But if the ground is hard and stony, so that it cannot be ploughed shallow as above mentioned, then plough as shallow as possible, and spread on the manure afterwards and harrow it in, and proceed as above directed ; the crop will not probably disappoint your expectations. As soon as the corn has become ripe, or too hard to roast, and if possible before it is touched with frost, cut it up, bind and carry it out of the field, and shock it in the usual way. If you have drawn the earth around your corn into hills, (which I would advise never to do in any case,) harrow the hills down with a heavy harrow, plough three inches deep, and spread on evenly four or five loads of well rotted manure,* and sow three pecks of good clear wheat to the acre, and plough it in with a light horse plough; and unless something disastrous happens, the summer following your garner may be filled with the finest wheat The same directions will apply to ground planted with potatoes. I would insure a crop sown on the ground thus managed for ten per cent. less than if sown on a summer fallow in the ordinary way.'

RUST OR MILDEW.

Wheat is subject to several diseases; the most common and generally injurious are mildew or rust and smut. Some writers assert that mildew is caused by a minute parasitic fungus or mushroom which fastens on the leaves and glumes or stems of the living plant. The roots of this fungus, intercepting the sap intended by nature for the nourishment of the grain, render it lean and shrivelled, rob it of its flour, and the straw becomes black and rotten, unfit for fodder.

Mr Butler, in *The Farmer's Manuel*, says in substance, that rust on wheat commences in July, at the time of the filling of the kernel in the ear, when a combination of heat and moisture bring into action rich munures, and forces into the straw, which has not finished its growth, more juices than the kernel can take up, being already filled out. These juices burst the straw, or pass through the natural pores of the stalk. When these juices come to the air, they lose by evaporation their thinner parts, become glutinous, and form the matter called rust or mildew.

Willich's Encyclopedia observes, 'Common wheat is more subject to this destructive disease than that which is bearded, *especially if the land has been newly dunged.*' Other writers likewise, attributed this order to the application of fresh dung, in great quantity.

The remedies against rust or mildew, according to Sir John Sinclair, are as follows :

1. Cultivating hardy sorts of wheat.
2. Early sowing.
3. Raising early varieties.
4. Thick sowing.
5. Changes of seed.
6. Consolidating the soil.
7. Using saline manures.
8. Improving the course of crops ; and
9. Extirpating all plants that are receptacles of rust.
10. Protecting the wheat plants by rye, tares, and other crops. The above remedies are enlarged upon by Sir John Sinclair, in *The Code of Agriculture*, but his observations are too voluminous to quote at large in this place.

Very able and instructive essays on the culture of wheat, by the Rev. Henry Colman, of Greenfield, Massachusetts, were published in the New England Farmer, vol xii. pages 25, 49, 57, 75, 73. Mr Colman gives in detail many experiments, some of which were made by himself. He states, in substance, that he sowed three acres of winter wheat on some of the best land in the Deerfield (Mass.) meadows. The land was green sward, turned up in the fall, rolled and harrowed, and the seed soaked in brine, limed, and sowed at the rate of two and a half bushels to the acre, on the 27th of October. One-half the field was abundantly manured, and to the other no manure was applied. The seed came up finely, and nothing could exceed the beauty and luxuriance of the growth, a greater part of the field averaging more than five feet in height.

'Above half the field, including an equal portion of the manured and that not manured, was passed over twice in the spring, after the grain had got to be six inches in height, with a light harrow drawn by one yoke of oxen ; and three weeks after was subject to the same process, according to the method practised in France, as mentioned by the late president of the New York Agricultural society, in his recent communication to that body The effect of this was to destroy very few of the plants, and to render the growth of what remained much more luxuriant, producing such an increase of the stem and such an extension of the heads, as to attract very forcibly the notice the most casual observer, and to induce several persons, who were ignorant of the process to which it had been subjected, to inquire for the cause of the difference in the two parts of the field, and to ask if a different kind of seed had been used.

'After all, however, to my extreme disappointment, the whole field has been blasted, and I shall hardly get back the amount of the seed sown, and that in a small shrivelled grain The crop is housed, but will scarcely repay the expense of threshing.

'Now that this result was not owing to the use of stable dung is obvious, because none was used ; and in that part of the field where the blight appeared to commence, and to make most rapid progress, no manure whatever was used.

'It was not owing to the want of the specific property in the soil, as far as that is to be found in lime and slaughterhouse manure, for both of these were employed ; the seed was limed, and the above manure copiously applied.

'It is not to be attributed to the luxuriance of the crop, for several pieces in my neighborhood, have suffered equally from the same cause, when the cultivation was by no means so high.

'It is not a time of universal failure, for a good deal in this vicinity is perfectly healthy and sound, and I have already reaped on the the same farm, a small piece of wheat on higher land, which was healthy and fair, though from the condition of the land it gave a small product This, however, though sowed at the same time, was ripe more than a week sooner than the other, from the drier and poorer quality of the soil.

'What then was the cause of the blast? I will not assume to decide this question, but as far as appears, it was atmospheric, occuring at a particular state of the plant which rendered it peculiarly liable to blight. As the wheat was filling fast, we had frequent showers, and much of what we Yankees call *muggy* weather; one day in particular the air was sultry, the heat intense, and the showers frequent, with intervals of sunshine, and the earth was steaming most profusely. An intelligent farmer in my employ, accustomed to the cultivation of this grain in one of the best wheat districts in New York, remarked to me that this was very severe weather for my wheat, and that he feared I should lose it. The rust in fact appeared for the first time the next day, and rapidly extended itself over the whole field, presenting no difference either in the manured or in the parts of the field not manured, and of course less luxuriant. Had my wheat been sown earlier, so as to have been further advanced, it would probably have escaped the blight ; had it been sown later, so as not to have been as far advanced as it was, perhaps, I should have been fortunate ; but the occurence of such a peculiar state of the atmosphere being wholly accidental, at least as far as we are concerned, it is impossible to make any certain calculation about it.'

In the succeeding number, Mr Colman quotes Sir John Sinclair's *General Report of the Agriculture of Scotland, Husbandry of Scotland*, a different work, by the same author, and a *Treatise on Rural Affairs*, by John Brown, of Markle, to show that wet and warm weather, when the kernel was beginning to form, had usually been accompanied with mildew in wheat, in Great Britain. In No. III, the writer states in substance, that the crops of wheat, both summer and winter, have been in this vicinity good and abundant, and on an average full twenty bushels to an acre. In the town of Northfield, Massachusetts, 'where 3 years since the article was scarcely cultivated, I have heard the crops of this year (1833) rated as high as seven thousand bushels. I think this must be an over-estimate ; but any thing like an approach to this, or even an edequate supply for the population of the town, which is believed to be fully secured, is certainly a considerable event in our agricultural history.'

The writer states that William Homproy, of Northfield Massachusetts, from twenty-

* It has generally been advised not to apply manure to a wheat crop the same year the wheat is sown, but the small quantity mentioned above would perhaps, serve as a *top-dressing*, without giving too great luxuriance to the straw, and cause it to be mildewed or blasted.