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The Field.

Mechi on Deeper Cultivation.

Mr. Mechi still sticks to his text, and perseveres in his sermon concerning deeper culture with all the pertinacity of one of those old-fashioned preachers who discoursed by the hour, and sometimes turned the hourglass the second time before the conclusion was reached. If we have any fault to find with his prelections, it is that they betray in some degree a lack of discrimination. Martin Luther used to say, "He that would preach well, must discriminate well," and sure we are, that it will not do to advocate deep cultivation for all soils indiscriminately. With this drawback held in view, and remembering that judgment must be exercised and adaptation studied, his articles may be profitably read by all and sundry. There is a certain enthusiasm about them which is inspiring and encouraging. The writer evidently has faith in farming, a passion for it, and a high opinion of its possibilities. Even when you cannot quite go with him in his conclusions, you catch the contagion of his earnest spirit, and feel that something must be done, and that with all your might.

In a recent article on his favorite theme, which appeared in the *Scottish Farmer* of June 1st, Mr. Mechie says, with all his old-time energy, "The more I prove practically, after thirty years' trial, and read or reflect theoretically, the more I become convinced that those who deprecate a deeper disturbance of the soil, are doing a great agricultural mischief, preventing improvement and profit."

The article in question is chiefly valuable from its collation of several extracts from Liebig's last great work, "The Natural Laws of Husbandry." Mr. Mechie's appreciation of the distinguished German chemist is highly creditable to him, showing that he is no charlatan or empiric in what he says and does as a tiller of the soil. He refers to Liebig thus: "Liebig knew more of the proper practice of agriculture than any other man then living, and for the first time laid open the secret of Nature's agricultural laws in relation to the soil, the plant, and the food of the plant."

We subjoin the extracts alluded to above, which will well repay attentive perusal:—

"The root fibrils will always extend in that direction in which they encounter the least resistance. Of the cereals, wheat, with a comparatively feeble ramification of roots in the upper layers of the soil, still forms the strongest roots, which often penetrate several feet down into the subsoil. On the length of roots few observations have been made. In some cases it has been found that lucerne will grow roots 31 feet, rape above 5 feet, clover above 6 feet, lupine above 7 feet in length. A proper knowledge

of the radication of roots is the basis of agriculture * * * therefore, to secure a favorable result to his labors the farmer should prepare the ground in a proper manner for the development and action of the roots. * * In the second half of the period of development the roots of the turnip plant having penetrated through the arable surface deep into the subsoil, absorb more potash than in the preceding stage. If we suppose that the absorbing spongioles of the root reach a stratum of soil poorer in potash than the upper layer, or not sufficiently rich in that material to yield a daily supply commensurate with the requirements of the plants, at first indeed the plant may appear to grow luxuriantly; yet the prospect of an abundant crop will be small, if the supply of the raw material be constantly decreasing, instead of enlarging with the increased size of the organs. The vigor with which cereal plants send forth their stalks and sideshoots corresponds to the development of the root. Schubert found as many as eleven side-shoots in rye plants, with roots 3 to 4 feet long; in others, where the roots measured 1½ to 2½ feet, he found only one or two; and in some, where the roots were but 1½ feet, no side-shoots at all. * * The true art of the practical farmer consists in rightly discriminating the means which must be applied to make the nutritive elements in his field effective, and in distinguishing these means from others which serve to keep up the desired fertility of the land. He must take the greatest care that the physical condition of his ground be such as to permit the smallest roots to reach those places where nutriment is found. The ground must not be so cohesive as to prevent the spreading of the roots. * * All these observations tend to show the great importance of the mechanical conditions which impart fertility to a soil not originally deficient in the means of nourishing plants; and that a comparatively poorer but well-tilled soil, if its physical condition be more favorable for the activity and development of the roots, may yield a better harvest than richer land." Combined with deeper cultivation, we should have that which it facilitates—I mean drainage. Liebig says in his "Natural Laws of Husbandry," p. 200, "The influence of a proper physical condition of the soil upon the produce can hardly be more convincingly proved than by the facts which agriculture has derived from the drainage of land, under which we comprise the removal of the subsoil water to a greater depth, and the quicker withdrawal from the arable soil of the portion circulating in it. A great many fields, unsuited by their constant humidity for the cultivation of cereal plants and the superior kinds of forage grasses, have been reclaimed by drainage, and made fit to produce food for man and beast. When the farmer, by means of drainage, keeps within bounds the amount of water in his fields, he controls its injurious influence at all seasons, and by the speedier removal of the water, which soaks the earth and destroys its porosity, a path is opened for the air to reach the deeper layers of the ground, and to exercise upon these the same beneficial influence as upon the surface soil."

The Oak and the Ash.

England is prolific of weather proverbs bearing on agriculture, and among them there is one about the comparative leafage of the oak and the ash. This is what the Rev. F. O. Morris observes about it in a recent number of the *Times*:—

"The present year will be a singularly good one for proving the truth or otherwise of either or neither of the old sayings as to whether the coming into leaf of the oak before the ash, or of the ash before the oak, is a sign of a wet or a dry summer, for never have I known, or any one else, I should suppose, the former having been the case so very remarkably as it has been this spring.

While the oak trees were well out in leaf, and have been so in a sort of standstill for the best part, if not the whole, of a month during the very cold weather we have latterly had, the ash trees looked, and still look, as they do in the depth of winter, and 10 yards off you could not tell that there was the appearance of even the bud of a leaf upon them.

One of the old saws runs thus:—

The oak before the ash,
A summer of splash;
The ash before the oak,
A summer of smoke.

The other, thus:—

If the oak opens before the ash,
'Twill be warm and dry, with good wheat to thrash;
But if the ash leaves open before the oak,
There'll be cold, and of rain too great a soak;
If the oak and the ash open nearly together,
Look out for a summer of changeable weather.

For myself, I do not hold with either of them, but, as I have said on a former occasion, my belief is that the coming into leaf of either of the trees before the other is rather the result of the kind of weather which has gone by than a sign of what is to come, except, indeed, in so far after a very wet spring a dry summer might naturally be looked for, and *vice versa*; but it is not always so." The exception, however, proves the rule that the ash is last.

Intended Experiments in Potato-Growing.

"Gael," an intelligent contributor to the columns of the *Scottish Farmer*, who farms in the south of Ireland, declares his intention, in a recent number, of trying the following experiments "next potato-sowing season." He says:—

"First, I will sow in autumn, planting immediately after lifting, thus adhering to the first law of Nature, which permits all plants in a wild or natural state to shed their seeds, when ripe, over the land, upon which they lie until the season of vegetation sets in, when they strike root, grow, and prosper. Among wild plants, too, are several tubers which lie in the ground from year to year, and grow and thrive each year only too well. It is therefore evident that we have over-tended, over-civilized the potato, and that some relaxation from our too artificial cultivation of the plant would be for its benefit. For the same reason as above stated, viz., Nature's laws, I would plant the potato whole, though I purpose, as an experiment, cutting a quantity into sets in the usual way, laying aside each set cut from the lower or best end of the potato, and planting them separate from the others."