

### Fall Fertilization.

We are in the habit of fertilizing our land in the Spring for our Summer's crop, and if it is judiciously done, it is a success. But there is another principle which I have experimented upon, that I am pretty certain is of greater advantage, it is the application of manure in the Fall rather than in the Spring or Summer, and for the reason that it favors the plant during the Winter, when it so much needs it. It serves not only as a protection, which is considerable, but helps in the vigor which it imparts to the plant. Plant growth must continue during the Winter or the plant dies; and it frequently dies from what we call exposure, when, under the same circumstances (of exposure), the plant, with the aid of a stimulant, might have survived. My experiments lead me to this conclusion. The vigor of the plant is increased, and according to the extent of the increase will be the capacity of resistance. A plant in poor soil, having little growth, must have a corresponding small measure of growth during the Winter, which reduces it at the best to a very low state, and a little beyond this destroys the plant.

Hence our poor and exposed knolls suffer most. If rich, there is less effect from the frost and the drying winds. To feed our grass lands and wheat fields in the Fall, therefore, must be a benefit, and this we find to be the case. The best time to feed a meadow is after the crop is removed or any time during the Fall so that it is early enough to start the growth. Once started, the stimulant will not yield its hold till it has accomplished its purpose with the plant, which will be done the following Summer, in the meantime favoring it during the Winter. It is our rich or well manured soils that are the warmest soils, the live soils, that have the most vigor, they will stand the most abuse, and life is tenacious in them. Let us, then, manure our land not only to grow our crops, but to keep them through the Winter. It is a benefit to our grapevines, our berry bushes, strawberry plants, shrubs, trees, &c., as well as our wheat fields and grass lands. Impact the Fall feeding and forcing; the growth then will be established, and with the first chance in the Spring will put forth a little earlier for the stimulant, and bearing up the better under the first severe weather; it is a help all through, and a loss nowhere if the manure is on hand, as it certainly may as well do its work on the land as to be in a pile, or scattered about around the farm. But even if a fertilizer is purchased, there is but the slight loss of the interest on the investment, the benefit, I hold, being much more than this. I have seen some fine effects on late-sown timothy, the stimulant sustaining the young plant against severe weather, which it seemed almost impossible to withstand. In all cases the application should be made early, so as to have its influence on the plant. It will be sure not to relax its grasp, however severe the Winter may be. — *Cor. Country Gentleman.*

### Weeds in Pastures.

Some time ago a letter was addressed to the Irish Press by Mr. Donnelly, the Registrar-General, on the great loss which the agriculture of the country suffers through the great prevalence of noxious weeds; he estimates this loss at one and a half million sterling; from observations which we have made from time to time through various districts in Ireland, we are fully of opinion that it has not been overstated, and should be inclined to say that it is really under the mark. At present there are innumerable pasture fields even in our best cultivated districts which are a national disgrace to a country calling itself agricultural. It is difficult to keep these weeds in check or to stamp them out when allowed to run on for a few seasons so as to become established. It is most desirable that pastures should be laid down in a cleanly manner, and afterwards every effort made to eradicate weeds as quickly as they appear. For the information of our correspondents who have recently queried us on this subject, we offer a few remarks on the simplest way of getting rid of the weeds which prevail most in pastures. Thistles just now form a marked feature. These, with the ragweed (*senecio jacobaea*), the leaves of which, when young, are much relished by sheep, even to the extent of their keeping it eaten down, will in cattle pastures of dry, loamy soils, make a very strong show with its yellow blossom; hence its common name of yellow weed. The several families of the dock tribe, the common sorrel (*runcex acetosa*), and the common brake or fern, are found in abundance on our upland pastures, while the low-lying districts abound with rushes of both hard and soft varieties (*juncus conglomerata* and *effusus*). All of these, with the exception of the rushes, will succumb after cutting them close to the root for two or three years, with either spade, hoe, or the common scythe, at the time their flower buds begin to form. Rushes are not so easily conquered, since they require continual cutting. On grazing land, one cutting in spring with another by the end of summer, keep those fields pretty free from them. Mowing such fields acts very beneficially for the same purpose. The grasses generally being of quick growth, exclude from these the air essential to their development, but where these occupy much space, more than cutting is required. The soil must be drained, and such fields finally put under the plough for the thorough eradication of this

tribe of plants. On poor pastures, the numerous families of the ranunculid form a conspicuous part. There are innumerable varieties of smaller weeds which appear in pasture and meadow, but are so insignificant that we no longer dwell on them. Besides the herbs mentioned as weeds, we have a very large proportion of our grasses, which, though not quite so noxious, are as injurious to the soil and useless as cattle food, such as the soft brome grass (*bromus mollis*), Yorkshire fog or white hay (*holcus lanatus*), and creeping soft grass (*holcus mollis*). It is singular how these weedy grasses have established themselves in our pastures and meadows, and are even purchased largely by farmers in their grass and seed mixtures, when they inadvertently pay large sums for the sweepings of hay lofts. Pastures producing these weeds need breaking and sowing with a profitable mixture as if they were only yielding either rushes or heather. There are two more weeds which demand particular attention. The first is couchgrass (*stilium repens*), which, in fallow land, is one of our greatest enemies, and can only be removed by careful picking during the several tillage operations, and by laying down this land in a clean state to pasture for a few years, by which time the other grasses so closely plant or thicken that it becomes extinct. In strong, moist soils, the colts-foot (*tussilago farfara*) is a weed with a root reaching to a more than ordinary depth. It is therefore, useless to think to eradicate it; the only means of its destruction being effected by observing its peculiarity in its growth, which is that of producing its flower stalk and corolla previous to the leaf. By watching this opportunity, and clipping it off repeatedly, the desire will be gratified, particularly if the land is drained. — *Irish Farmer.*

### Drainage of Pastures.

The possibility of over-draining grass land, says the *Agricultural Gazette*, is a point which has been frequently discussed, and is one which it would be well to see settled. Opinions are freely expressed upon it in the most excellent correspondence collected upon the subject of laying down to permanent pasture, in the current number of the Royal Agricultural Society's Journal; and some practical men speak in favour, and others against, a thorough drying of grass land by artificial means. We hope we may not be misunderstood, if we express a degree of doubt as to the value of much that is called practical opinion on such a point as this. The opinion of farmers is guided by hearsay as well as by their own experience; and in the case before us the opinion is generally founded upon actual experience of but small areas of land. Apart from this there must be a considerable element of uncertainty in comparing the produce of pastures before and after drainage; much more so than, for instance, in the case of the yield of wheat on arable land. Not only quantity but quality of herbage must also be taken into account, and the question becomes further complicated thereby.

We remember some years ago dressing a pasture field with bones, one ridge in the middle of the field being left unmanured for the sake of comparison. This ridge becomes conspicuous from it carrying more grass upon it than any other ridge in the field. Here was a curious anomaly—the unmanured ridge carrying more grass; but the reason was not far to seek, for it consisted in stock persistently refusing to eat the herbage and preferring the sweeter grass grown upon either side. Something similar, no doubt, frequently occurs when pasture land is drained, and coarse grasses that made a great show, are displaced by finer herbage. After the trying drought of 1863, Mr. J. C. Morton took the opportunity of collecting a mass of evidence on the effects of draining pastures, and the balance of evidence was decidedly in favour of thorough drainage. Still there is no doubt that opinion is divided, and we think, allowing these divergent opinions to be alike sound, the difference to be found is the nature of the soil. Let no one be afraid of over-draining clay or even loamy soil; but let caution be exercised and experiments be instituted before light soils are subjected to such an expensive operation. We say this in deference to practical opinion; but for ourselves, we have but small faith in what is called "over-drainage." We have never been able to understand the phrase. We may be wrong, but our idea is that a drain simply allows of the discharge of surplus water, and that surplus water, or water of supersaturation, is better discharged. When a drain has run off the surplus water, it ceases to act.

Again, a drain only acts upon the section above it, and certainly not upon the water existing in the soil below it. Take the case of a drain four feet deep. This drain tends to free the section of soil above it of its excess of water, but it leaves the said section saturated. Secure the discharge of the water of supersaturation, and all is accomplished which drains are capable of. Double or treble your drains, and they can do no more, and hence we say we cannot grasp the idea to be conveyed in the term of "over-drainage." If it means that a multiplication of drains can cause the soil to give a single drop of water which by its porosity and capillary attraction it is capable of holding, we deny the possibility of the idea *in toto*. If it means that pasture land, any more than arable, is the better of holding an excess of water—by which we mean water which would flow away if it only could—we again think it a false view. It is recommending filling up the hole at the

bottom of a flower-pot; it is arresting that circulation of both air and water through the soil which science has taught us to value and promote. Do we not yet understand that unless water escapes through the soil (whether by naturally porous rocks or artificial drains) water cannot enter it at the top? The freer the circulation, the better far; by thorough drainage effete, stagnant, injurious water is got rid of, and the fruitful rain is admitted in company with the sweetening, oxidizing air.

There are two possible ways in which land might be over-drained, but neither of them is likely to influence practice on a large scale. The first is by draining to such a depth that the water table reservoir, or supersaturation, should be reduced to so low a level as to be unavailable as a source of moisture, through the agency of capillarity. It is possible to conceive a field drained so that the water table should be sunk ten or twelve feet beneath the surface, instead of only three or four, as in ordinary practice. We say that under such circumstances a field might suffer from over-drainage.

The other condition under which the same evil might be brought about would be in case of the soil of so open, sandy, and dry a character as to be incapable of holding a sufficient amount of water for the use of the plants it supported. Such a soil might require—to refer once more to Mr. Mechi's simile of the flower-pot—the hole in the bottom to be stopped. We believe such cases to be rare, indeed, so as to interfere in no material degree with the view we have already propounded: that over-drainage exists principally in the imagination of those who believe in it. — *Ohio Farmer.*

**DISSOLVED BONES.**—In a late issue of the *Queen'slander* we recommended dissol. of bones as a good fertilizer, and we are now asked: How are bones dissolved? When a bone-grinding mill is not within reach, the bones may be broken up into small pieces; soak them in water, then add 50 pounds of sulphuric acid to every 100 pounds of bones. When the bones are dissolved, they are liable to set solid. To prevent this, mix earth with the mass, and the bone fertilizer is ready for use. — *Queen'slander.*

**TURNING UNDER WEEDS.**—I have had better success in ploughing weedy land by putting on a rolling coultter and a moderately heavy chain to the right end of the double-tree, and let the chain extend back to upright or halve of plough leaving chain loose enough to not catch the dirt from mold-board. I have this season turned under weeds as high as my horse's back, and can hardly see them, ploughing six inches deep. The present wheat crop would be better with us to mow and burn the weeds after wilting. — *A FARMER, in Rural World.*

**THE GROWTH OF LUCERNE.**—The soil best adapted to the growth of Lucerne is a deep, calcareous loam, rich in mineral elements, and situated at a moderate elevation. The land should be trenched or double dug, and be perfectly free from root weeds of all kinds. The seed is best drilled in rows from 12 to 18 inches apart, during the last week of March or first week of April. The quantity of seed required is 10 to 12 pounds per imperial acre. Care should be taken to secure a fine seed bed. Under favorable circumstances the first cutting will be ready by the middle of May. During the first year the soil should be stirred between the rows by the frequent use of the hand or horse hoe. Digging or deep cultivation between the rows, except by the use of a hand fork, destroys the spongioles of the roots, and retards the vital functions of the plant. If the land is free from twitch little cultivation is needed after the first year. If the soil and climate are suitable, five cuttings a year may be obtained, thus producing a large bulk of valuable food, particularly for dairy stock. The average duration of the plant under culture is eight or ten years. Grazing close with sheep at any time, is fatal, as they destroy the crowns of the plants. Allowing the seed-pods to form likewise weakens the aftergrowth. Lime, phosphates and mineral alkalies, are the most suitable manures. — *North British Agriculturist.*

**SAVING AND CURING SEED CORN.**—The failure of seed corn to germinate, last spring, was so general that it is evident, that the cause is not generally known, or, if otherwise, precautionary measures were not observed. Every farmer who had a failure in this respect last spring should understand the cause of it and so apply the remedy in the future. Last fall was wet, cold and frosty while seed corn was being saved. These facts would suggest that corn will fail to grow if frozen before it is dried. A fact that has just come to my knowledge substantiates this conclusion. A friend, an intelligent, observing and practical farmer, told me this circumstance: he usually traces up his seed corn and hangs it in his garret—a warm and dry place. He did so last fall with all but one trace, a very nice one. Being in a hurry, he hung it up in the corn house, and there it remained till it was wanted for planting. He said that it was not exposed to sweat or steam from other grain. In the spring, while planting that from the garret, he came to a choice part of the field, and the thought struck him that he would plant that best trace. He did so, and the result was that, while the garret corn came up well, of the trace from the corn house, to use his own words, "not one kernel in ten came up." This would indicate that seed corn should be hung in a warm and dry place until dry, to say the least. Perhaps it would be well for farmers to observe this precaution in saving seed hereafter. — *New England Farmer.*