

## Grasses and Forage Plants.

### Laying down Land to Grass.

This is an important process, requiring far more judgment and care than are usually bestowed upon it. The practice is but too common, of cropping land to grain until it is pretty well exhausted, and then seeding it down, as though grass required little or no fertility of soil to sustain it. To this mistake may be attributed many of the failures, and much of the disappointment connected with the branch of farming now under consideration.

In England, where the richness and permanence of meadows and pastures are proverbial, it is regarded as essential that the soil should be in good heart, and in a clean condition before laying it down to grass. No intelligent farmer in the old country would think of seeding down a field that had been neglected, or had become foul with weeds. A field in such a state would be summer-fallowed, and treated to deep and frequent cultivation, as a preparative to the purpose to which it was to be devoted. Drainage and liming would also be resorted to. In this country, one or two well-manured, hoed crops form an excellent preparation for grass. It is essential to the best success that there should be thorough preparation in some way or other. The idea that land in any condition, no matter how run out or dirty, is good enough for grass, ought to receive no countenance from sensible farmers, anywhere, at this time of day.

Supposing the land to be in proper tilth, regard should be had to the question whether mowing or pasturage is desired. A grass well adapted for meadow, may be quite unsuitable for pasturage. For example, timothy, one of our best grasses for mowing, is not equally good for pasturing, as it cannot bear close cropping by stock. Whatever the object in laying down to grass, it is advisable to sow a mixture of seeds. If meadow is desired, a selection should be made of such species as come into flower about the same time. On the other hand, if pasture is wanted, such varieties should be chosen as will keep up a fresh and successive growth from early spring until late autumn. The chief grasses desirable for mowing are timothy, red-top, white bent, orchard grass, perennial rye grass, June grass, rough-stalked meadow grass, meadow fescue, and tall fescue. No place is given in this enumeration to the clovers, because it is customary and best to use them in a rotation with other crops, and to allow them to occupy the soil only for a year or two as a recuperative change. The prominent varieties best fitted to form pasturage, are meadow foxtail, orchard grass, red top, sweet scented vernal, June grass, meadow fescue, and yellow oat-grass. The choice of kinds, and the proportion of admixture, are matters that require judgment in view of peculiarities of soil, climate and exposure. A liberal supply of seed is advisable in all cases.

The question has been much discussed, whether to sow grass seeds by themselves, or with a grain crop. Both methods have their advocates, and as usual in greatly debated matters, much may be said on both sides. The safest answer to the question is, "that depends," mainly, on climate; where moist and cool, sow alone; where drouthy and hot, sow with grain. Sown alone, the young plants get rooted more quickly and strongly, and have the full benefit of all the fertilizing material in the soil. Sown with grain, they have partial shade with its accompanying moisture, at the cost of what the grain crop consumes for its support. In this country, the safer plan is to sow with grain, though we have known lone sowings to turn out very well. But we are now so subject to dry, hot summers, that it is rather hazardous to sow grass by itself. Wheat is the best grain to seed down with, and winter wheat is preferable to spring. It is becoming somewhat common to use barley as a seeding-down crop, but we find the best practical

farmers in England objecting to it from its peculiar habit of growth. The roots are spread immediately under the soil, and feed principally upon the upper layer. This peculiarity of barley, not only deprives the young grass plants of needed sustenance, but leaves the surface of the land in a loose puffy state, unfavorable to the well-being of the succeeding crop. A well cultivated soil under, with a firm surface, are desirable conditions for grass, and they are secured with a partnership of wheat. When grain and grass are sown together, steps must be taken to renew the fertility of which the land is deprived by the grain. It is well to leave a long stubble, and no stock of any kind should be allowed to pasture the young grass, no matter how strong a growth it may seem to have acquired. Barn-yard manure is not considered a good application at this early stage of growth, from its tendency, however, well rotted, to smother down the feeble plants. A dressing of artificial manure is preferable. Superphosphate, guano, bone-dust, and sulphate of potash, are used instead. A recent English agricultural paper recommends the following admixture.—1 cwt. nitrate of soda, 2 cwt. superphosphate of lime, and 3 cwt. sulphate of potash; or, if equally cheap, 2½ cwt. of dissolved guano, and 3 cwt. sulphate of potash. After the first mowing, a liberal annual dressing of well-rotted barn-yard manure, liquid manure, or artificials must be given, if a respectable yield of hay is to be had. The plan of mowing year after year without manuring, associated as it usually is, with the sale of the hay off the farm, is the fatal road by which many a thoughtless farmer has travelled to poverty and bankruptcy. "Feed your land and it will feed you" is a maxim of universal application to crops, grass included.

When grass lands are intended for pasturage, the greatest care is needed not to graze them too early or too closely. A firm sward is wanted to prevent sharp hoofs treading out tender rootlets, and a sufficient range must be given to avoid such close croppings as would destroy the crowns or hearts of the young plants. Pasturage is, at best, an extravagant method of feeding stock. They destroy and waste a large proportion of the food nature provides for them. Their droppings, unless gathered up and composted, which is costly and troublesome, smother and kill the grass on which they fall, except in the case of sheep, whose ordure is usually sufficiently scattered to be beneficial rather than hurtful. As a general rule, only the half cleared and broken parts of the farm should be devoted to pasturage. It would be good economy to clear up thin patches of woods, taking off the decaying timber, brush, and rubbish; grubbing out useless weeds, bushes and saplings; and seeding down what is now, to a great extent, waste land. There are also steep hills and deep valleys, gorges and low-lying spots, unfit for the plough or the mower, which might be improved into good pasturages. Too often such places are left in possession of an utterly useless growth of shrubs and weeds. A riddance of these, a cleaning up of the surface by the removal of stones and rubbish; and a scattering of grass seed, would make these neglected parts of the farm both useful and ornamental. A wise economy would dictate that only such parts of a farm as cannot be turned to better account should be pastured. All waste should be avoided; both the waste of allowing animals to range over the rich and fertile field, that can most profitably be devoted to the scythe and mowing-machine; and the waste of permitting barren and unproductive places to exist as eye-sores, nuisances, and prolific nurseries of weeds.

### Dairy Pasture—June Grass.

L. B. Arnold says in the *Live Stock Journal*. "As a plant for grazing, *Poa pratensis*, or June grass, has great significance with the dairy interest. It grows with a very light stem, its herbage being

nearly all leaves that are narrow, long, soft, and rich in the elements of butter and cheese. Under favorable circumstances, they grow vigorously, and at lower temperatures than the leaves of most other grasses, starting early in the spring, and continuing late in the fall. They remain fresh and green a long time under the attacks of drought and frost. June grass is one of the most hardy grasses, and grows in almost all latitudes and all places, and under the most unfavorable circumstances. In the Eastern and Middle States and Canada, it is known as June grass; in the South and West, as blue grass, or Kentucky blue grass. Beside being rich in nutriment, it is invaluable on account of the fine aroma and nutty flavor it gives to butter and cheese. It also imparts the same fine flavor to beef and mutton. Though it yields a delicious butter, its best effects are seen in the cheese dairy. The cheesy matter derived from it is not only highly flavored, but its peculiarly soft texture renders it especially susceptible to the action of the cheesy fermentation. Curd derived from blue grass changes more easily and rapidly into rich, salty, soluble cheese than that obtained from other grasses, thus rendering successful cheese-making less difficult. There are several other species of *Poa* that are pretty widely diffused, but they do not equal the *pratensis* in usefulness. *P. annua*, a low spear grass, grows everywhere in cultivated grounds, along paths, &c., as a weed, and is an annual that ripens early, and drops its seed in time to mature a second crop each season. *P. compressa*, a blue jointed wire grass, very common, and a favorite of sandy soils, is very tenacious of life, and has small, pale, hard, unnutritious etc. as, that grow in a decumbent tuft. Fowl meadow grass (*P. serotina*), and rough meadow grass (*P. trivialis*) make excellent butter and cheese, and good meadow and pasture in moist rich soils, but lacking the hardness of *pratensis*, they soon run out on drier ground. The hardness of June grass is owing to its peculiar mode of growth. It does not, like the other species of *Poa*, have the division between root and stem at the surface of the ground, exposing all the green herbage to the weather. But it sends out from the parent root stems that spread in all directions below the surface, as strawberry runners and white clover do above it. These subterranean stems strike root at every joint, and throw up stems and leaves to the surface, covering it with a thick mat. They cross and recross each other in every direction, making a strong turf that tears as if formed of a web and wool. These underground stems, protected from drought and frost, ready to send up new shoots, should all the herbage above ground be destroyed by these influences, give June grass a never-dying hold on the soil, and enable it to spread and flourish where other grasses would run out. A fire may even run over the ground, and burn everything green from the surface without doing it any serious injury; for the stems below will quickly send out new shoots. Among the new plants favored with this system of underground stems are the Canada thistle, milk-weed, quack-grass, and drop seed, or, as some call it, Nimble Will (*Mulinum Mexicana*); hence the great difficulty in eradicating them when once fairly established. But tenacious as these pests are, June grass will crowd them out and hold sole possession of the ground. In the South, June grass, or, as it is there called, blue grass, is often propagated by sowing the seed. In the North this is very rarely done, but pasture and meadow are mainly seeded with timothy and red clover. Limited quantities of several other grass seeds are also occasionally sown. Red clover is a perennial only under favorable conditions, and a few dry summers, and hard, open winters, soon nearly exterminate timothy. As they die out, the indigenous June grass constitutes the bulk of the pasturage, coming in, like the white clover that usually accompanies it, from nature's seed, which, after lying in the ground an indefinite time dormant, springs into active growth under favorable circumstances. When once it gets a fair footing in the soil, nothing but the plough will subdue it. Therefore it forms a leading element in all permanent pastures, and controls the quality of their products. No locality becomes distinguished for the excellence of its dairy products, especially of its cheese, until this grass becomes the principal occupant of its pastures. True, there are other grasses that will give even larger yields, but they die out too soon to give a permanent reputation to any considerable extent of country. It is this hardy blue grass, which nobody fosters, but which creeps in by stealth, that gives character to the whole dairying belt that lies across the continent from east to west, embracing a breadth of some ten to fifteen degrees of latitude."