THE GRASSES.

[*Note*—The term grasses is here used only in the popular sense, and includes those plants of the order *Graminiæ* which are not cultivated for grain.]

In no department of American agriculture is there more lack of knowledge, and such wretched practice, as in the cultivation of grasses. Individual farmers, in this country, do not possess the means or ability for conducting such a series of experiments and observations are requisite for obtaining a full and correct knowledge of this important and extensive family of plants. Hence, this branch of our husbandry must remain defective, till suitable institutions are established for that purpose.

In a valuable article on grasses, in the New Genesee Farmer of 1840, Professor Dewey states, that "more than 1,800 species have been decribed by botanists. More than three hundred are ascribed to N. America; and more than two hundred are found in the State of New York." About 150 species are said to be natives of Great Britain; and about 40 kinds are, more or less, cultivated in England, for hay or pasture. In the United States, only five or six kinds are in cultivation at all, and only three or four extensively. In Western New York, thousands of farmers never sow any grass seed except Timothy, (*Phleum pratense.*) This is avowedly the most nutricious and profitable grass for hay; but it is by no means well adapted for all purposes, and to all soils. For Pastures, especially, it should never be used except mixed with other kinds.

The advantages of sowing a mixture of grasses are not sufficiently understood, or appreciated, in this country. It has been found that a square yard of turf will support, at least double the number of plants when comprising several species, that it will of only one species. The reasons for this are, first—the different species subsist on somewhat different elements of the soil; and, secondly, having different kinds of roots, some with tap roots running deep, and others fibrous and superficial, the different species derive ther sustenance from different parts or strata of the soil.

Sir H. Davy and others, observed, that in the best old natural pastures, in England, there is a mixture of from 15 to 20 species of grass; and that some one or more of these have their particular season of luxuriance each month, from spring to latest autumn; or, in other words, different species of grass growing on the same piece of land, supply stock with pasturage in different months of the year. It was also observed, that the mixture was different on different kinds of soil. Hence was seen the necessity of a more definite knowledge of the character and habits of grasses, in order to establish a perfect system of culture; and this was the occasion of the celebrated Worburn experiments, under the patronage of the Duke of Bedford, conducted by G. Sinclair, the particulars of which constitute the admirable standard word on grasses, called "Hortus Gramineus Woburnensis." The experiment and observations of Mr. Sinclair were of ten years' continuance, and embraced more than one hundred species of grasses. Each kinds was cultivated, seperately, on different soils; the time and manner of growth, and the amount and quality of produce, of each kind, carefully noted: and the proportion of nutritive matter, and other elements, ascertained by chemical analysis. These experiments form the basis of the present improved system of manuring grass lands in England, and may aid us, to some extent, in this country; but owing to the difference of soil, climate, and other circumstances, similar experiments will have to be made here. There is no need of waiting for those experiments, however, for enough is already known, of some species, to leave no room for doubt that their introduction and general culture, in this country, would be the means of greatly improving our agriculture.

Orchard Grass, (Dactylis glomerata.)—This grass has been cultivated for many years, in some parts of this country; but is very little known, and cannot be said to be fairly introduced in Western New York. It is not quite equal to timothy, in the nutrive quality of its hay; but it excels that species in other important qualities, especially for pasture. It starts earlier and more rapidly in the spring, continues its growth more uniformly throughout the summer, and affords later pasturage in the fall. All kinds of stock are very fond of it, and it is said that the sheep will pass over every other kinds to feed on it. The late Col. Powel, of Pensylvania, after cultivating this grass for ten years, declared it produced more pasturage than any other grass he had seen in America. Sinclair ranks it among the very first, especially for sheep: and its cultivation in England has greatly increased of late years, it having, with timothy, in a measure superseded rye grass or sowing with clover.

In the transactions of the New York State Agricultural Society, for 1841, a writer from Madison Co., states, that orchard grass is cultivated by some farmers in that county, and produces excellent hay, and abudance of pasturage; starting early in spring, and again after being mown. It also endures drought better, and yields feed later, than any other species; is never killed by the winter, and its roots are easily subdued.

Perennial Rye Grass, (Lolium perenne.)—This grass deserves to be mentioned more on account of its popularity in Great Britain, than for any benefit that is likely to result from its introduction into this country. Professor Low says, this "is one of the most important of the gramineus herbage plants, and is more generally cultivated in Europe than any other." It is valuable for its large produce of hay, and also for pasturage, and is the kind heretofore commonly sown with clover in England and Scotland. It has been frequently tried in this State, by European settlers and others, but not with very good results. The winters are too cold, and the summers too hot and dry for it.

The Indian Rye Grass appears to be an improved variety of the preceding, said to be more productive. In Buel's Farmers' Companion, it is stated, "We have twice tried the Italian rye grass, but the result has induced us to abandon it. This variety give the largest produce: and were it hardy enough to withstand our winter, it would, no doubt, become a valuable acquisition to our husbandry."

Meadow Foxtail Grass, (Alopecurious pratensis.)—This is one of the most highly esteemed of the British grasses, and, if introduced, might prove of great advantage for mixing with other kinds, in laying down permanent meadows both for hay and pasture. Professor Dewey says, "I have not known it cultivated, but small patches of it are found frequently in the meadows of New England, and in this State." Loudon says, "This grass possesses the three great requisites quantity, quality, and earliness in a degree superior to any other. It is often fit for the scythe by the middle of May [in England.] It flowers twice a year, and gives more bulk and weight of hay than any other grass." Dickson says, "Of all the English grasses this appears to be the best adapted for cutting twice." Dawson says, "This is one of the earliest and best pasture grasses, but not so well adapted for hay, as it produces but few stalks, which are but sparingly furnished with leaves; its root leaves are very broad, long, soft, slender, and grow rapidly when cut or eaten down by live stock; it grows, naturally, on rather superior soils of medium texture, and constitutes the greater portion of many of the richer natural pastures in Britain. It requires two or three years, after sowing, to arrive at full maturity."

Meadow Fescue Grass, (Festuca pratensis.) is another British species, eminently deserving of introduction for permanent grass lands, nearly or quite equal to the preceding for earliness, productiveness, and quality. It is occasionally found in old fields and meadows in this State. Low says, "this is justly ranked among the superior grasses. Although large, it is not a coarse plant, and does not, like some of the other large kinds, form tufts in growing." Loudon—"It is highly grateful to every description of stock; and is more in demand for laying down meadows than any other species except the rye grass."

Tall Fescue, (Festuca elatior.)—This is claimed as an American species, but does not appear to be indigenous to this State, although frequently found in old meadows and cultivated fields. It is of much larger growth than the preceding; yields an abundant crop, and although of coarse appearance, it is relished by cattle generally. It seems to delight in moist, rich soils, along river banks, &c. The writer is not aware of any experiments having been made with its cultivation in this country; but it seems well adapted for moist rich lands, and is certainly deserving of trial. According to Sinclair's experiments, this species stands the highest of all in the quantity of nutritive matter, when cut at the time of flowering; and our timothy grass when cut at the time the seed is ripe. Several other species of *festuca*, both British and American, are deserving of cultivation, mixed with others species.

Tall Oats Grass, (Avena elatior.)—This grass has been highly recommended for introduction, and promises to be of much value in this country. It is of rapid growth, and very productive of hay, though, according to Sinclair, the hay is not very nutritive. Buel says, "It possesses the advantage of early, late, and quick growth, and is well calculated for a pasture grass. We have measured it in June, when in blossom (at which time it should be cut for hay) and found the seed stems four and a half feet high." Lawson observes, "This grass is cultivated to a greater extent in France than any other kind whatever. It has not been fairly tried in British husbandry, but, judging from the experiments that have been made, it seems well deserving of more extended cultivation." Colman, in his Fourth Report, says, that this grass is cultivated and much esteemed in Middlesex Co., Massachusetts.

Sweet scented Vernal Grass, (Anthoxanthum odoratum.)—This is a British grass, of a small growth, but valuable for pastures, especially for sheep, on account of its very early growth. It is esteemed for parks and lawns, in England, on account of the fragrance of its flowers; and it is this which gives the fine fragrance to English meadows and hay fields. It is seen occasionlly in old pastures in this State, and according to Fessenden, it constitutes a large portion of the crop in some meadows in Massachusetts. He observes, "Its chief fault is, that it is too early for other grasses, [for hay:] but it affords a second, and even a third crop, if cut early. It is this that gives the fine flavor so grateful to milch cows."—(*Complete Farmer.*)

Blue Grass, (Poa compressa.)—The Blue Grass of this and other eastern States, is a native species, found in old pastures, and by road sides, especially in land somewhat worn out. It forms a dense turf, like its sister species *P. Pratense*, or June grass: and, like it, yields but little produce, and that of such inferior quality, that cattle eat it with reluctance. It is distinguished from June grass by the peculiar bluish color of the stems and flowers. The roots are very tenacious of life, and difficult to eradicate, consequently it is deemed by farmers an unwelcome intruder.

The Blue Grass of Kentucky and other southern States, has, by some botanists, been regarded as indentical with that of the north, and by others as the June grass, [*Poa pratense.*] but from the accounts that have been given of it in the papers, it is a much more valuable species than either of them, and, if found to be sufficiently hardy, it may be advantageously introduced into the middle and eastern States.

Other Southern Grasses have been frequently noticed in agricultural publications of late, and some of them are described as being highly valuable—such as Gama Grass, Bermuda Grass, Buffalo Grass, &c.; but such as have been tested are not able to bear the winters of this State, and it is not probable that the other will be found of value, except for more southern climates.

(A complete treatise on the grasses, indigenous and cultivated, would be of great value.