

Feeding Mowing Lands.

By Joseph N. Sturtevant.

Economy.—The second thought—
Feeds the cattle by the swath.

I hear it said that farmers are saving much hay this open weather; cattle manage to pick up much in the fields. Indeed, in my riding I see, sometimes, herds of cattle in mowing fields, grazing the dry aftermath. For some days it is likely they may secure a third or half their support away from the hay mow. It seems to me, however, that for every mouthful of hay saved by this means, four or five good mouthfuls will be lost to the barn the coming summer. If of this you are doubtful, then consider the reasons in support of the assertion. It is assumed that the soil on your farm is light, thin, and rests upon a well drained subsoil.

The practice of manuring grass lands upon the sward, to keep the grass well, and save the expense of ploughing, and hazard of reseeding, has become at least a Massachusetts custom.

This custom finds its support in the belief that grass roots lie near the surface of the ground—that the rains or melting snow liquefy—so to speak—the manure applied to the surface, and in the liquid form, it settles in the soil sufficiently for the surface roots of the grass to be thereby nourished. We know that the most fertile layers of our farm soils are the layers near the surface. Surface applied farm manure has its greatest strength retained in these layers. Go down three or four inches and it is found that for every half inch deeper there is less of fertility. Examine the ploughed furrow, and the great mass of roots are not found below these few inches. What lies below this depth is very important in sustaining a growth of grass, but the larger part of the stuff of which grass is made withdrawn from the soil is found above. Different is it with clover, perhaps, and other deep rooted plants, and different it may be, perhaps, with grass in a clay or deep soil.

Careful experiments show that the greater portion of liquid manure applied upon the surface does not drop through like lead in water, to the bottom, but that it is diffused through the uppermost parts of the soil. Unless then grass roots are conceded to be near the surface, topdressing of grass lands we must regard as an indifferent use of manure. But we know it produces results of value.

Accepting then these two positions, the one as to the descent of manure in the soil, and the other, as to the growth of the roots of grass, another position with respect to the nature of grass will be readily accepted. That grass, unlike some species of plants, the common English grasses, does not flourish in a dry soil, but requires water in abundance during the growing season, we think is every one's experience. In our dry soil, put in manure, and with a rainy season, there is good yield of grass. But without frequent rains upon a light soil, or some means of retaining moisture in the soil, our crop fails. To have grass in perfection demands that the farmer have a suitable soil; that the soil shall be fertile, and that it shall be kept sufficiently moist. Without the last, all efforts are unavailing. The thing of greatest difficulty is to secure water to the growing crop.

What has the feeding close of our mowing fields in autumn to do with this? Some say to feed grass close to have it meet winter in a naked condition is to have it winter killed. I fear more that it will be summer killed.

The field that meets the spring sun in this naked state, is the soonest green. The sun does this, the rain being abundant in the early spring. The early part of June, or towards the middle of the month, there is often the beginning of a drouth, no showers—the roots of the grass, being near the surface are soon dried—the blade slackens in growth and ripens short of a full development.

Suppose, instead of this, the fall finds a growth of, say four inches of grass—the crisp cold deadens it—the winter snow falls upon it, and when gone leaves the dried grass flattened to the earth. The spring sun is up—this cover—half an inch of loose mulching; the blade is slow to start, nor does the thirsty sun, and more thirsty winds suck up the moisture in the soil rapidly. Why? There is this half inch of non-conductor of heat, of cold, of moisture between it and the soil. The land receives the rain from heaven, and drinks it in—and between summer showers there is not a rapid rendering up of the water so much required. There is nothing more conducive of a retention of water in the soil than a good mulch. Nature, when let alone, kindly provides this for grass, between the time of haying and autumnal frosts. Does anything require a mulch more than grass.—Mass. Ploughman.

Implements of Husbandry.

Ploughing and Ploughs.

Why do people plough the soil, or why is ploughing at all necessary? It is well to know the theory of everything we put into practice, because then we can work intelligently and with a definite and expected object in view.

Packed soil i. e. soil in its natural state is unfit for proper nourishment. Wonderfully enough yet truly, nature has so ordained that air and water must play very important parts in her economy and not only afford special and essential elements in the sustenance of animal life, but also in that of the vegetable creation upon which that life depends. Caked, lumpy earth—earth which has lain undisturbed for years—contains within it all the chemical elements necessary for nutrition. The action of the air is absolutely necessary in order to animate or vivify these elements into action and it is the action thus produced which nourishes the plant.

Water also is as necessary, either in the shape of rain or dew, as air, for, like air, it introduces into the soil either some new element or elements not already there, or it affords a superabundance—so to speak—of something already there, thus disarranging the original plan and setting the whole into action.

But this is not the only use of ploughing viz., to afford access to air and moisture. Roots must spread if the plant is to grow and become strengthened, and roots, especially in their first or tendril stages, are so weak and slender that the coast must be made perfectly open and clear for their extension or they will not spread out at all, and hence they will of course fail to draw from the soil the amount of nourishment necessary to sustain a vigorous plant. The soil therefore must be stirred up and loosened, so as to offer no obstacle to the creeping of these little fibral roots in every direction.

The benefit of ploughing land may therefore be summed up briefly as two fold, to afford access to air and moisture, and to admit of the extension of roots.

The ploughs used in Canada, which have already been pretty fully described in the "FARMER" vary in style from the commonest form of the "short stub" or rough-land implement to the finest iron-beam jointer and fancy plough. It is not a little singular also that notwithstanding this variety and the numerous tests to which all the different implements have been subjected, there is all over the country a decided leaning back towards the old No. 4, as on the whole as serviceable and durable as any of the others.

There is noticeable however, in all those who have tried them, a decided preference for some late ploughs of English and Scotch manufacture, for in both these countries in which farming has reached almost to perfection, the agricultural implements although heavy in comparison with ours, have kept pace with other improvements. Of these the firm of Ransome and Sims of Ipswich, in Suffolk, furnishes some very superior ploughs. One class of these is fitted with a lever neck, and has the box of the share attached to a movable noose so that as the share wears away it can be set more to land or with more pitch, as may be desired. In another variety the share is fitted to a rigid noose, and in general these ploughs are constructed to lay furrows at an angle of 45°, in which case the width of furrow should be one half more than its depth. This method of laying the work is best adapted for exposing the ground to the action of the atmosphere, and, when harrowed down, produces the best seed bed.

One of the most noted English Ploughs which has hitherto been imported into Canada, but used principally on clear, level land, is the Patent Trussed Iron Beam, which is a very fine, scientifically adjusted implement.

The handles are of just sufficient length to give perfect command over the plough.

The beam is on the patent trussed principle by which greater rigidity and strength are secured with the same weight of metal, than can be by an ordinary solid beam. The construction of the beam also permits the coulter to be placed quite centrally, so that it does not require to be 'necked,' and therefore is more easily kept in its proper position than when it is necked, which it must always be in solid beam ploughs.

The wheels are carried on one cross bar, so that they can be more firmly fixed in any desired position, and more quickly shifted than when they are carried on two separate bars, and the whole wheel fastenings are rendered extremely simple without omitting any adjustment that can be required for either the land or furrow wheels.

The draught is taken directly from the head, for careful experiments have shown that in a properly constructed plough, the draught bar is quite needless and often very injurious, causing the plough to choke in foul land or to pitch in hard land.

The share is fixed to a wrought iron, movable lever neck, which allows it to be set with more or less pitch as may be required, and the arrangements for fixing the neck in the desired position are much simplified and very effective. The form of the share and mould-board have resulted from a series of very careful experiments on a variety of soils, so that they leave the furrow slice neatly turned over at an angle of 45° with the arras full and sharp.

The skim coulter may be set with more or less pitch at the pleasure of the ploughman. The plough can also be fitted with a mould-board and share which cuts a furrow slice of a rectangular section, the kind of ploughing considered best in England for producing crops, and turns it completely bottom upwards, thus exposing the lower strata of soil to the fertilizing action of the atmosphere, and burying all the surface vegetation so that it decomposes, becomes manure, and enriches the soil. This is the kind of ploughing usually adopted in Kent.

The same plough is likewise intended to produce a high cut or crested furrow. This sort of furrow possesses the advantage of exposing rather more surface to the atmosphere than the rectangular one, but to set against this, there is about one-ninth less land disturbed or stirred up by this plan than by the former one, in consequence of the furrow bottom being inclined to the land side instead of at right angles to it, and whatever is the depth of furrow the horses must travel two miles farther per acre than is necessary on the rectangular system.

Another rather novel implement made by the same Suffolk firm is what is known as the double plough or the "patent iron one-way, or turn-wrest plough." It is for the purpose of turning furrows in one line of direction and parallel to each other, and is invaluable for hill-side ploughing. It is simple in formation and almost self-acting in its adaptation to each successive furrow. It does not require to be turned round at the end of the field, but the ploughman, having completed his furrow to the right, turns the handle from one end of the beam to the other. Whilst performing this simple operation the horses turn round on the land side of the plough, and as soon as they commence drawing, the left hand share and coulter set properly to work. The plough is provided with two mould-boards and coulters, facing in opposite directions, is capable of turning a furrow 7x10½ inches and is strong enough for four horses.

Still another most singular plough, intended more for sub-soiling than for common ploughing, is known as the 'Archimedean.' It is intended to pulverize the soil more thoroughly than by the common method, and for this purpose it is provided with an axis so fixed in the frame of the plough that it is free to rotate on two centres. This axis carries three steel blades upon it, so placed as to form a portion of a triple-threaded screw. The resistance of the earth at the plough is drawn forward, causes the axis to rotate by which action the blades pulverize the earth. It is used after ordinary ploughs, and at a depth of from 6 to 12 inches. It requires from two to six horses according to the nature of the soil.