

Grasses and Forage Plants.

Lucerne.

Lucerne, illustrated on this page (from Plant), is a crop of which but little is known in Canada; and that little is not of an altogether favorable character. As far as we can learn, it has been tried several times around Toronto, with partial success only. If it could be successfully grown, Lucerne would be a most valuable addition to our resources from its remarkable power of resisting drouth, when once well established. We think the plant is worthy of other and more systematic trials, care being especially bestowed upon it in its earlier stages, and in the preparation of the soil.

Lucerne is a leguminous plant, botanically known as *Medicago sativa*. It has a history dating back five centuries before Christ, at which period it was brought from Persia to Greece. From Greece it found its way to Rome, and with the Romans to the south of France, where it has continued to be grown. The early Jesuit missionaries to Chili took the Lucerne with them, and there the plant finding its natural conditions, has thriven amazingly. Either by the Jesuits or other settlers, Lucerne was taken north to California where, under the names of "Alfalfa" and "Chihan clover," it has become the sheet-anchor of agriculture. Whether a plant whose preference is so marked for a hot and dry climate can accommodate itself to the climate of Canada is scarcely yet proved, but it has been successfully grown in Michigan and New York under conditions certainly not less trying than it will have to face in a large part of Ontario. We have seen Lucerne in cultivation in the moist country of England where its yields pass belief. A good, heavy swathe of forage from two to three feet high, every six weeks, for about ten months of the year is a thing not to be sneezed at.

Lucerne is sometimes sown broadcast, alone or with spring grains, but is better in drills, say fifteen inches apart. Drilling, we believe, is universal in England. It is better sown in the fall than in the spring. A peck to the acre will do for drills; about twice as much is required for broadcast. The proper soil for it is a rich, deep soil, having a permeable sub-soil of loam, sand or gravel. On light soils with impermeable subsoils it will not succeed, nor yet on compact clay soils. It sends its roots deep down in search of moisture. In California the roots have been traced fourteen feet. Deep tillage is evidently necessary as a preparation, and, if hard-pan exists, it must be broken up, or Lucerne will not flourish.

Like all the broad-leaved plants which derive a great part of their nourishment from the atmosphere, Lucerne is not an exhaustive but a renovating crop. When the soil is at last broken up after lying several years under Lucerne, it is full of decayed roots which have brought up material from distances beyond the reach of shallow-rooted plants, and made them available for plant food. Added to which the broad leaves shade the ground and thus conduce to its fertility.

Sown in the fall, Lucerne will be ready to cut by the end of May, and thereafter about every six weeks till the frost comes. It should be kept clean of weeds till it has established itself, and on this account drilling is the superior method. It should be cut as soon as it comes into flower; not much earlier, or it is watery, less nutritious and harder to cure; and it should be cut before the seed has formed, or the nutritive properties will have left the stalks.

Cut green, it is exceedingly valuable for soiling cattle. As soon as cut it sends fresh shoots, and when once it has got its roots down into the subsoil, it will defy the most severe drouth.

Way's analysis gives the preference to Lucerne over Red clover in heat producing principles and fatty matters, while it is inferior in albuminous or flesh-forming principles, as follows:

	LUCERNE	RED CLOVER
Water.....	69.95	51.01
Albuminous principles.....	3.83	4.27
Fatty matters.....	82	69
Heat producing principles.....	13.62	8.45
Woody fibre.....	8.74	3.76
Mineral matter or ash.....	3.04	1.82
	100.00	100.00

Sowing Timothy with Wheat.

In answer to a correspondent enquiring what is the proper time to sow clover and timothy, Hon. George Geddes says in the *New York Tribune*:—Some Winter wheat raisers like to sow their timothy and clover seeds on a light snow, such as frequently falls in March. If the snows of Winter have been thawed away, and the ground left naked, and part, or all the frost is out of it, and then there comes a light snow, so that the tracks made by men in sowing the seed can be readily followed, and the weather is cold enough to not have the snow make too much mud to cling to the feet—when all these favoring circumstances combine, at any time from the middle of March to the first day of May is a good time to sow grass seeds or wheat, and the later in the season, having the snow on the ground, the more likely to have a good result.

We generally sow our timothy seed with our wheat, or if the wheat is sown very early, sow the timothy about the 20th September or 1st of October. If the timothy is sown very early in September and the fall is warm and showers frequent, the timothy will grow too large in the fall and choke the wheat. If the timothy is to be sown in the Spring, we generally mix the seed with clover seed and sow both at the same time, taking distances that are as close together as we should for the lighter seed of the timothy. Sometimes, when desirous of doing the work very nicely, we sow the timothy alone and again go over the field with the clover seeding.

As to the condition of the soil most favorable for the seeds growing, it may be said that a slight covering is important, and for timothy this covering must be very slight—not more than half of an inch. If Winter wheat occupies the ground, then the elements are to be looked to for the covering; freezing and thawing do the work. Rains also help to cover, and if the surface of the ground



Lucerne (*Medicago Sativa*.)

is thawed and deeper down the frost is still in the ground, the coming out of this low down frost will keep the surface moist and cause the seeds to fall into small crevices, and thus find a covering. In very favorable times the seeds will live and take root if they are not covered at all. In case of dry weather following the sowing, and the elements are not doing the work satisfactorily, a roller will flatten out the drill marks (I assume that all Winter wheat is sown by a drill) and push them sideways and do the work of planting the seeds, and at the same time pulverize the surface soil in the act of levelling the drill marks, and do the wheat as well as the grass seeds great good.

The Army-Worm and Hungarian Grass.

The increasing destructiveness of this worm—the *Lucania Unipuncta*—demands from farmers a closer attention to its habits and a comparison of experiences as to how we shall combat it. There is no better way of taking such testimony than by farmers giving their observations and views through your columns, and so let us compare notes. Out of the multitude of experiences valuable hints will be elicited. The first I saw of the worm was on wheat in 1873. Then, and since, it has attacked bearded wheat the most seriously. The following year it was much more destructive, and extended its depredations to timothy, and fields left for seed were greatly damaged.

This season it is still worse, and I have heard of fields of Hungarian grass so stripped that nothing but the bare stocks remained. As Hungarian is a deservedly popular crop, this attack upon it looks serious, and demands action. Among the remedies proving efficient, is sowing fine salt thickly on the grain or grass. Another is to mix one pound of carbolic acid, with one bushel of plaster and sow,

Either application makes it distasteful to the worm. In the case of the former application the salt might be good for the soil, as well as make the grass and straw more palatable for stock.

Speaking of Hungarian grass, reminds me that I saw a new use for it the other day. It had been sown early, and after making a pretty good growth was pastured, affording excellent feed for milk cows, and a large quantity of it. When I saw it, it was growing up again rapidly. When we remember that we can grow three tons of this grass to the acre, it will be seen how great an aid a patch of this will be to our short pastures. It is an annual, and can take the place of our oats crop very nicely.—*Ducks Co., Pa., Intelligence.*

SOWING TIMOTHY AND CLOVER.—My practice is to harrow the wheat three times in the spring. We go over the wheat both ways with the harrows, and then sow the clover seed and follow with the harrows to cover the seed. If the ground is very hard, the harrows do not break up the crust sufficiently to afford a good covering for the seed, and if dry weather follows we have a poor "catch" on these hard spots. I have my doubts as to which is the better plan, but am inclined to think that so far as securing a good catch of timothy and clover is concerned, it is better to give up the idea of harrowing winter wheat in the spring, and to sow timothy seed in the fall, and the clover seed very early in the spring. It depends very much on the soil and season. The harrowing helps the wheat and kills a good many weeds, and on sandy loam the harrow leaves a good seed-bed for the clover, and if we are favoured with a few showers, we are pretty sure of a good catch of clover.—*Wells and Talks, American Agriculturist.*

COVERING GRASS SEED.—The old plan of leaving grass seed and clover uncovered when sown, is still practiced to a large extent. In a moist season—especially moist at the start—it will do; but even then a light covering is an improvement. In a drouth it is indispensable, particularly an early drouth; and not only a light covering is required, such as is secured by brushing the land, but a harrow should be used. Thomas's smoothing harrow is just the thing. Two years ago there was a severe drouth, beginning immediately after the snow had left. Seeding, as a rule, was a failure. The loss in this section alone was immense. The exceptions were invariably the fields where the harrow was employed—not the brush, as this seemed to share the general disaster. A mellow, dry soil will permit the seed to be well put down, air in such case reaching it. The same condition will admit of moisture, even long rains, as I have known it. Only have the ground mellow and drained so that the surplus water passes off. I find it best to have the surface of the ground level—leveled with harrow and roller—when it is seeded, as then no part of the seed will be buried too deep.—*Cor. New York Tribune.*

THE HARDINESS OF THE COMFREYS.—The *London Garden* says: The *Synphytum* or Comfrey are most valuable for the shrubbery and wild garden. They grow freely, in fact, rampantly, under trees or elsewhere, and are good and showy plants. *S. aspernum* is the tallest, growing to 6 feet, and has red flowers changing to blue. *S. caucasicum* (2 feet), white flowers, and *S. tauricum* (3 feet), also with white flowers, are all fitted for naturalization. *S. Bohemicum*, with brilliant red flowers, only growing to 2 feet, is worthy of a place in the border, as is the variegated form of *S. officinale* (a handsome plant) and, perhaps, *S. Tuberosum*, with yellow flowers, though I am not certain that the latter may not prove too rampant. The *Gardeners' Monthly* says after copying the above: "We copy this because we have noted how well these Comfrees are suited to our American climate." The *CANADA FARMER* in late issues has drawn attention to the *Synphytum aspernum*, prickly Comfrey, as a forage plant, for which purpose it is now grown in England and Ireland. So reliable an authority as Mr. Mehan of the *Gardeners' Monthly*, having testified to its hardiness, the probability of it being suited to Canadian farming is much increased.

QUACK GRASS.—If I wanted to kill quack, I would attack it in the hot days of the last of August and the first of September; ploughing then, and harrowing twice crosswise, would do more to exterminate it than the cultivation of the rest of the year. The rays of the sun at that time seem to have a peculiar withering force—a ripening power which they do not have even at harvest time; and it is so intended that they may ripen up all vegetation to prepare it for winter. My garden was a bed of quack last year; the oats only grew four to six inches high. It was ploughed in the fall, just before winter set in, and not harrowed. I concluded it would thus get its quietus, but it was only planted. I cross-ploughed in the spring; that only helped it on. But I went to work with tool and seed, and by midsummer I had the finest garden in the county—taking prizes on nearly everything I offered, and filling my cellar for winter's use. It was, however, a vast deal of work to subdue the quack, for it seemed to thrive under the attacks of steel, and make a superior growth; and in one or two instances it actually prevented the starting of some beds like parsneps and carrots. I found, however, that when the hot days of August came, it yielded up the fight, and my soil is now in condition to make a proper growth of anything I may put on it. This quack, like all other quacks, has to yield when properly attacked.—*Cor. Country Gentleman.*