either broad-cast or in drills. The large kinds of corn grown in the Western, and Middle, and Southern States are best for this use. They throw up a prodigious growth of green stalk. The horse-tooth or dent corn, to be found at all our flour and feed stores, is an excellent variety to sow. A rich bit of land, near the barn, devoted to Indian corn for green feed, will be found a perfect treasure in a dry, hot time, and will keep the cows "up to their milk" when they would otherwise fall off sadly.

Hay-Making.

Haying will soon be upon us, a season formerly anticipated with no small dread, as a time of anxiety, hard toil and painful back-ache. The advent of mowing machines has greatly changed all this. It is not needful now to scour the country in search of stalwart fellows to swing the scythe, nor is the farmer distressed in view of a big crop of grass to be saved, and a scarcity of hired help. He knows that he has a trusty piece of machinery, with which he can make his team do the mowing, far more expeditiously and thoroughly than it used to be done by a gang of laborers. He can ride round his meadow instead of toilsomely marching through it all the livelong day, and his back is as sound and comfortable at night as it was in the morning. In-doors the rest from work is as great and welcome as it is out-of-doors. The farmer's wife is not crowded out of house and home with boarders, nor overwhelmed and done-out with excess of cookery. On a well-managed farm, now, haying necessitates but little change from the ordinary systematic routine, which goes on all the time. Other labor-saving implements and facilities have followed in the track of the mower, so that altogether, this department of farm work may now be looked to with pleasure, instead of being anticipated with dread. It will be opportune to refer, just at this juncture, to a few matters connected with haying, in regard to which a large number of farmers yet need to be informed and instructed. One of these is the

Proper time for Haying.

The mistake is too often committed of leaving grass and clover too long before cutting. So soon as they are in full bloom the mowing machine should be started. The rule current among our grandmothers in the good old days of "herb-tea," contains the correct philosophy of hay-making. The maxim about gathering herbs was - "cut in the blossom, and cure in the shade." When the plant is in bloom, the sugar is in the stalk, ready to perfect the seed. Earlier than that, the sugar is not formed, and later on, it has become converted into woody matter. An experienced agricultural writer says :—"Early in its growth, grass is watery, as it approaches blossoming the amount of sweet, nourishing juice increases, after blossoming, and as the seed ripens, the sugar diminishes, and the hard, woody fibre increases. The best time, therefore, generally, is to cut within a few days after the principal portion of the crop has appeared in flower. For milch cows, it should be cut a little earlier than for working oxen and horses. Hard-stemmed grasses, as orchard grass and timothy, should be cut earlier than softer sorts. A little reflection will convince any one of the correctness of these views. Grass, it is well-known, is highly fattening. Why is not hay equally so? Because of the loss of the nutritious elements of the plant. If cut, and properly cured, at the stage when these fattening properties are most abundant, it is evident that the hay must be more valuable than if left to a later period. Maturing seed is an exhausting process, and unless the special object be to grow seed, mowing should be done at the time of blossoming. All who have had experience with early-cut, well-cured hay, testify to its superior value, and if any one, who has been in the habit of deferring haying until the period of ripeness will try the early plan, our word for it he will be convinced that late mowing is a serious blunder."

Curing Hay.

Next to the importance of seizing the "nick of time" for cutting hay, is the importance of curing it wisely and well. Good hay should be green when dry. This may seem a strange remark to many, but both science and experience prove its truth. If newly cut grass were to be at once dried by some artificial process, it would be green. It is long exposure to sunshine which takes the color out of it, and gives proof that the curing process has been badly done. Hay is often sunburnt, fairly scorched and "done brown." Every observant feeder knows, that horses and other stock do not eat such hay with any relish, and often refuse to eat it at all. The goodness is all drawn out of it by the power of the sun's rays, and it is little better than straw. Here the wisdom of the old herb rule shows itself: *cure in the shade*. As fast as grass is cut, it should be sent flying into the air, and before night it should be made into cocks. A heavy dew-fall is almost as bad as rain. When grass lies in the swathe just as mown, the sunshine scorches it on top, the damp ground prevents it from curing underneath, and the dew gives it a wetting well-nigh equal to a shower. Put speedily in cocks, a slight heating process takes place, and the hay "makes" both faster and better, than if left just as mowed. Hay should be wilted only in the sun, and cured in the cocks. It had better be a little too green than too dry. If, on hauling it, there is any danger of heating in the mow, a little salt can be sprinkled over it. This will make it safe, and cattle will like it all the better. The *Valley Farmer* well observes. "The whole science of hay-making consists in three things; *first*, cut the grass when in the best; *second*, dry it not too much; *third*, let it go through a sweating process before it is put into the barn. On these three things depends the quality of the hay. Hay should be grass preserved. The nearer to the fresh, tender, succulent grass you can get it the better."

But it will perhaps be urged, that this advice about curing hay hardly squares with what was said at the outset about the freedom from hard, back-breaking labor, which is characteristic of modern hay-making. It would require quite a force of hay-makers to stir the newly cut grass without cessation, and to get it speedily into cocks. We reply it will pay to do this, if need be, by hand, but a horse hay-rake, if strongly made, as it ought to be, can be pressed into the service, also the hay-sweep, another labor-saving implement. There is however a machine exactly adapted for the purpose, which is unfortunately but little known and still less used by the farmers of this country, although it has been extensively employed in Great Britain and the United States, for a number of years past. We refer to

The Hay Tedder.

This machine is intended to follow in the immediate wake of the mower. It is mounted on two drive wheels, and is furnished with a number of revolving spring forks, usually about sixteen, which when in motion resemble the action of huge grass-hopper legs, which, kicking and flying about in a most lively manner, stir up and toss about the newly-mown grass, exposing all parts of it equally and thoroughly to the action of the sun and wind. It is drawn by a single horse or stout pony, and does its work in the most effectual manner possible. By its means hay has often been cut, cured, and put into the barn on the same day—although we hardly think this good practice, as the quality of the article is undoubtedly improved by a slight heating before housing. By the use of this machine the need of extra help is obviated, and the curing process expeditiously and perfectly accomplished. Early cut grass cured by means of the tedder, is far more valuable for all feeding purposes, than if cured on the old slow-coach plan, by which a large proportion of the nutritious matter is wasted.

Keeping the Machines in Order.

Too much stress cannot be laid on this. It is essential to their smooth, pleasant, effective working, that they should be thoroughly attended to. Every farmer who buys a mowing or other machine, should take pains to understand its nature and what is necessary to its working rightly. He should have a box of tools attached to the mower, especially a good monkey-wrench, rivetting hammer, whetstone, file, and the best quality of sweet oil. He should never start work unless the machine is in proper working order, and the utmost care ought to be taken to keep it so. If a nut gets loose, it should be tightened at once, if anything goes wrong it should be put right *instanter*, and all the parts exposed to friction should be kept well oiled. The mower should be started steadily without jerks, and if any difficulty occurs, backed gently, and the matter understood and adjusted. Many machines are greatly damaged, if not utterly spoiled by want of attention in these and similar respects. It is wise policy to get the best machine that can be had, and then to keep it *always* in the best possible condition.

Stacking and Housing.

On these points but little need be said. Owing to limited barn room, and slender means, many are obliged to stack their hay. But it is a wasteful practice. A farmer of sound judgment and long experience, on calculating the matter, estimated his loss in stacking hay at twenty-five per cent. As his hay crop was sometimes one hundred tons, and he had been accustomed to stack a considerable part of it, he was not long, after making this calculation, in resolving to have more barn room. Many will doubtless think this estimate wide of the mark. Let such reflect on the loss from moulding at the bottom of the stack, and from weathering at the top and sides of the stack; let them consider whether there must not be some loss of aroma and nutritive quality from exposure throughout the whole stack; and finally let them take into account the general conviction as to the superiority of the barn stored hay: and we think they will not find the calculation very far out of the way. But if the hay in the meantime must be stacked, the stacks should be carefully built on a foundation of some sort, well up from the ground, thoroughly covered in, and the wasteful practice of feeding stock at the stack, wholly eschewed.

Agricultural Emplements.

Mowers.

Before entering upon the general subject of mowers and mowing, it would be well perhaps to discuss briefly one or two relative points by way of introduction. The first of these is the question whether it is more profitable to buy a combined machine than a single mower and reaper. By a careful scrutiny of facts, we think we can arrive at a pretty correct and satisfactory answer—one which may serve as a general rule.

In the first place, the impossibility of both mowing and reaping with the same speed is now received by all manufacturers as a truism. A combined machine therefore, in order to perform both functions, must have its gearing somewhat more complex and cumbrous than that of the single mower or reaper. This will, of course, increase its weight and draught (however little) as compared with one of the others.

Nor can it reasonably be expected that the combined article will perform its work, however well in either the hay or grain field, quite so perfectly as a single implement, specially constructed for, and adapted to one purpose only. These then constitute the principal points of difference between the two kinds of machines, viz., weight, complexity of gearing, draught and perfection of work. True, the degrees of difference may be slight, and no doubt they are so in many cases—still they must exist to a greater or less extent.

But again, taking the five-shift crop theory, which is fast becoming popular amongst the agriculturists, about 50 per cent of cultivated land may be said to be under grain and hay together—that is fifty acres to every hundred. This then would be the quantity of work which a machine would be required to cut annually on an ordinary 100 acre farm—or 100 acres on a 200 acre farm and so on.

Now it has been discovered by experience that the usual life time—so to speak of a reaping or mowing machine is close upon twelve years—say ten, and it has also been found that a combined machine on a 100 acre farm will last as long as the two single machines on a 200 acre, or larger farm. The reverse of this however is not true, viz., that if a combined machine on a 100 acre farm lasts ten years, therefore two single and separate machines should last twenty years on the same farm. The castings might and probably would stand the time with care, but the fact is that ten year's hard rattling tells heavily upon the frame work of anything. The