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Newburgh, N. Y.

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THE lawn is the dominant, characteristic feature of the American home garden. You may have the spread of green grass and nothing else and get a fairly pleasing setting for the house, but never a satisfying home from the latter without the lawn. It is almost a platitude, yet it is something to be considered by every home builder.

The lawn is indeed the essential base of the country, suburban or rural home. It distinguishes the "country" from the "city" with its paved yards and asphalted approaches. The lawn pleases the eye and it gives to the mind that sense of relaxation and repose which is looked for in all places away from the city itself. It has been well likened to the canvas on which the artist paints his picture; for when the landscape gardener comes to the problem of planting and embellishing the home grounds with an appropriate selection of trees, shrubs, and flowers his first consideration is the lawn, its place, extent, and the support it gives to the property as a whole. Without the lawn no garden worthy the name!

In view of the supreme importance of the lawn, then, an understanding of its upkeep is most desirable. And the delight of it is that there is nothing mysterious, nothing very onerous in keeping a lawn good.

Maintenance consists of a few simple details: rolling, cutting, watering, and feeding, and with a lawn properly made the most important of these is the cutting. In the old days this was done by a scythe, an effective instrument in the hands of the expert worker, but otherwise extremely unsatisfactory.
The invention of the lawn mower, less than a hundred years ago, marks one of those eras of progress that works revolution. Grass must be cut continuously throughout its growing season if the lawn is to retain the perfection of velvety evenness that is today within the possibility of every lawn owner, and this cutting can be accomplished easily in a definite way by means of the modern lawn mower, the credit for which in its present day form must be given to Thomas Coldwell, who somewhere about 1860 began his improvements on the original foreign-made model imported by Mr. H. W. Sargent for his extensive gardens at Fishkill, N. Y., directly across the Hudson River from Newburgh.

Thus was laid the foundation of an industry that has progressed by rapid strides to this day when there are available lawn mowers in a multitude of types and sizes, hand-operated, horse-drawn and motor driven, a size and style to fit every size and style of garden and lawn to the most extensive country estate, park, and golf course.

So accustomed are we of this day to see the well-mown lawn in the typical residential districts of our suburb and countryside that but little thought is given to the part played in the development of the lawn by the lawn mower having superceded the scythe.

Perhaps because the modern lawn mower does its work so well,—is such an efficient tool in operation,—there is a certain tendency among some gardeners to cut too close to the roots of the grass. Frequent mowings to keep the growth under proper control adds to the beauty of any lawn in keeping up a uniformly "well-kept" look. Irregular mowing leads to an unkempt irregular appearance of the turf because of the likelihood of putting off the job of cutting, on one pretext or another, until the grass has become unduly long.
When cut in that condition the exposed surface is brownish in color and thin looking—having none of the appearance of fresh grass.

The first cutting in spring as the season opens may well be deferred as long as possible in order to get a good growth started; and because in the early spring the uncertain fluctuations of the weather—from hot to cold and back again seemingly without any system—is likely to leave the newly exposed roots and lower parts of the grass stalks open to the burning rays of a sudden burst of extra strong heat.

But once the cutting is begun the work is to be kept up at frequent, fairly regular intervals to keep an uniform appearance to the grass. Cutting the grass has direct benefits, too, in that it prevents the grass plants from going to seed, and induces them to push up blades of fresh green in a dense mat that gives the so called desired velvety appearance.

Particularly is this desirable in the case of grass areas close around the house, on tennis or croquet lawns, and on grass edgings to walks, flower beds and borders.

After the first cutting in the season the grass will, as a rule, need cutting about once a week, and in some cases when the growing conditions are very favorable in the height of the season perhaps more frequently. As a matter of fact, judgment must be exercised here, the object being to keep the grass as nearly as possible at an uniform height.

The height of the cut is easily determined by a simple adjustment of the mower. About two inches is most satisfactory for the best interests of the grass itself—but a more well kept appearance may be desired and a much closer cut adopted. But the closer the cut the more feeding and other attention the lawn will need. But whatever height is determined, let the machine
be set to that height and kept there, and regularly run over the lawn about once a week, and a constantly neat greensward is assured.

At the same time there need be no arbitrary "mowing day," and a longer or shorter interval may be allowed according to circumstances. If for any reason the grass has been permitted to get unduly long it may be better to use a scythe and not cut very close, thus avoiding exposure of the under-texture of the turf.

The ideal day for cutting the grass is dull and cloudy—then the grass actually cuts more easily, and the little plants do not suffer any shock from the "pruning."

With the knives all properly set the mower really keeps itself sharp while in use. The adjustment may be tested by inserting a piece of writing paper against the bottom knife and revolving the blades by hand, in this way testing the entire cutting surface. Improperly adjusted and blunt knives result in an irregular surface of the lawn or results in so pulling the little grass plants as to loosen the roots. This may later on in a hot spell cause the death of the grass plant.

When using the lawn mower begin at one side of the lawn, pushing steadily forward at a brisk walking pace and traveling in a straight line to the opposite end of the lawn, thus making a clean straight strip of cut grass. Then return on a parallel strip with one of the guide wheels a couple of inches inside the previously cut strip. And so continue to the finish. This assures a perfect job and obviates leaving little uncut tufts here and there over the lawn which are certain to result from any irregular criss-cross manner of working. The next time of cutting start at the opposite end or at right angles.

Some lawn mowers have a provision for catching the clippings as they are thrown up by the revolving knives, when this
is desired, and some way of gathering these clippings becomes necessary if the grass be allowed to become unduly long before it is cut. If there is no gathering box such clippings must be removed by raking, for which purpose a wooden rake is preferable to an ordinary garden rake. But as a general rule it will not be necessary or desirable to gather the clippings, but rather let them lie where they fall to act as a light mulch and protection to the grass. The short clippings which are likely to be the rule from a regularly cut lawn are thus distinctly beneficial to the grass plants. Only in extreme cases where the cuttings are very heavy should they be removed.

Next to cutting, rolling is the most important detail in keeping up the appearance of the lawn but, unlike cutting, rolling can generally be dispensed with after the season is well open. The purpose of rolling is to ensure a good contact between the roots of the grass plants and the soil in which they are growing, and there is a certain benefit from the use of a mower which is also equipped with a roller.

The degree of rolling of necessity will vary according to the soil, being greater in the case of a heavy soil than in one of a light, sandy nature. The action of alternations of frost and thaw during the winter results in loosening the roots of the plants in their hold on the soil and the effect of rolling is to compact this loosened mass of roots and soil and to maintain this condition so that as the plant grows it can draw its proper supply of nourishment from the ground.

In public parks and wherever great stretches of lawn exist the cutting is usually done by means of a machine of considerable size, horse drawn or motor driven. Such machines have rollers as integral parts and consequently the separate rolling operation may usually be dispensed with. But on the small
hand-cut lawn preliminary rolling at the beginning of the season is a very important factor in its future welfare.

The only limit of weight of a roller that shall be used is the convenience of the person working it; in other words, the heavier the better. In actual service a three hundred pound roller is about the limit of a strong man's capacity, but a thousand pound weight would not be too heavy for the welfare of the lawn. The further advantage of the heavy roller is that apparently it prevents the establishment of the Crab Grass. A new lawn will need more rolling in its early stages than an old lawn.

Top dressing before rolling is useful in two ways; first, in helping to fill irregularities of the surface so as to restore a perfectly level stretch, and secondly, in actually carrying food supplies to the growing plants.

This top dressing may consist of finely sifted garden soil into which some bone dust has been mixed in the proportion of about four to one. This mixture may be lightly scattered over the surface by taking a shovelful at a time and distributing it by a broad sweep and then rolling it in where it falls.

Proper watering of the lawn is one of the least understood things in its up-keep if we would judge of general results seen in our suburban districts. The truth is that too many people approach the question of watering from the point of view of the picture a sprinkler makes rather than an understanding of the needs of the plants and their growing demands.

There is one simple guiding principle to be borne in mind whenever watering a lawn is considered. When water is given let it be given in sufficient quantity to literally give a thorough soaking. Too much emphasis cannot be put on this fact. Mere sprinkling which dampens the surface is not watering, and no matter how charmingly delightful the delicate spray of water
glistening in the sunshine may be to the onlooker, it is in fact training the plants into a bad habit.

Of course, watering can be done by the sprinkling plan if one has assurance that sufficient water is allowed to flow—if the sprinkling arrangement is allowed to stand sufficiently long in one place to absolutely soak the surface over which it plays.

Light sprinklings have a tendency to draw the roots of the plants upward in their search for moisture and when such watering is done early in the season and the season itself is dry, the plants so treated fall easy victims to a spell of hot sunshine during midsummer drought.

There can be no calendar of watering, no time-table on which to work. Watering the lawn, as in all other garden operations, is a matter of adjustment to conditions. It will vary with the soil, with the sub-soil, and with the situation. It may be necessary to begin watering in April some years, but in others it will hardly be necessary to water at all.

All surface sprinklings do, however, accomplish something; in that they check transpiration of water from the grass leaves and from the surface of the ground for a short time, and in that way sprinkling in very hot weather may be palliated but must be followed up as soon as possible by an application of water that will be thorough in every sense of the word.

The lawn made on a well prepared soil will not need as much water as one made on a poor soil or one that is of insufficient depth. A lawn perfectly prepared, made on good soil, of good depth, and not unduly drained should hardly need water at all; but the fact is that most of us have to take our lawns as we find them and on light shallow soils watering is a real necessity.

When water is supplied by the hose remove the nozzle, lay the open end of the hose on the ground, and allow the water to
flow freely in one spot about an hour. Be careful that there is not too much pressure. If there be any danger of the flow of water wearing a channel into the soil place a piece of board on the lawn, laying the open end of the hose on this to distribute the water. When the lawn does need water give it day or night or both.

There is no real foundation for the fear sometimes expressed of watering in the sunshine. The only possible injury that could result is a slight burning of some of the tender tips through the sun's rays being focused through pendant drops of water as in a burning glass. But such injury would not be any more noticeable than the browning and shrivelling of the cut edge of a blade of grass that occurs whenever the lawn mower is passed over it and that is so small as to be hardly recognizable in ordinary circumstances. Water whenever and wherever it is needed. Better the welfare of the entire plant than the temporary welfare of an individual leaf!

As the lawn ages its food supply must be maintained. Obviously, the right way to keep the lawn green is to so make it in the first place that it has all its necessary stock of food in the soil for a number of years; but surface dressings may be used to maintain growth. Corn cannot be expected from an unfed land and yet corn land is cultivated annually. Grass is a permanent crop enduring for many years and really needs richer feeding than the vegetable garden. But does it get it? It does not, because of the tendency of weak humanity to take a chance on the present and defer trouble as long as possible.

After the lawn is once made it can be fed only through surface dressings and the lighter the soil and more sandy, the greater the demand for fertilizers. On such soils dressings of well decayed stable manure will give better results than anything else. On
heavy soils chemical fertilizers are equally satisfactory. The latter have the advantage, and great advantage, of being free from weeds. Stable manure nearly always carries in weed seeds. This top dressing may be put on in the fall as a mulch or it may be spread on any time during winter, even when the ground is covered with snow.

Tobacco stems are often used, and being free from weed seeds, answer the purpose very well. Pulverized sheep manure as sold from the stock yards is also free from weed seeds and may be used with impunity.

Chemical fertilizers are cleaner in appearance and, in fact, have more concentrated food value. Nitrate of soda has long been a standby scattered over the surface of the lawn at the rate of one to two thousand pounds to the acre. (A plot a hundred by twenty-five feet is about a fifteenth of an acre). This may be applied just in advance of a rain or it may be first of all dissolved in water and applied in solution, which is perhaps the more convenient way, using one pound of soda nitrate to forty gallons of water.

Ammonium sulphate, another source of nitrogen, may also be used, and it is the experience of most observers that where chemicals are used better results are obtained by alternating these two chemicals.

In order to keep up the general appearance of the lawn occasional top dressings to fill in depressions or holes may be made any time of the year by good sifted soil from the garden in which some bone meal has been mixed. Lawn seed is then scattered on the surface and the whole rolled or beaten down.

In places where wood ashes are available an excellent lawn fertilizer is at hand and may be used in the same manner as the chemical fertilizers.
Lawns made from the recognized lawn mixtures contain a great quantity of blue-grass, which will not grow on a soil showing an acid reaction. Therefore, wood ashes are valuable because they supply an alkaline element.

Lime, that is, agricultural or slacked lime, two bushels to a plot one hundred by twenty-five, may be used on any lawn and will help to maintain an alkaline soil condition which is essential to the production of that blue-green color of the lawn that is the acme of perfection of lawn color.

Unfortunately, weeds will creep into good lawns and eternal vigilance is needed to keep them in control. On an acid soil we may have a yellow, poor looking lawn without weeds; or a perfect, blue-green, rich looking stretch of grass with weeds, for, curiously, the alkaline condition that makes for good grass also encourages the weed plants.

To suppress them and keep them out requires constant vigilance. Broad-leaved weeds can be destroyed by scattering sulphate of iron, which being caught on the broad, outstretched leaf, practically burns it and in time kills the plant (it does not affect the grass because of the upright habit of growth); but the more satisfactory way is to keep the weeds down by constantly cutting out such things as dandelions and rib-grass, as quickly as they appear, then making good any hole in the surface and reseeding the bare spot. Dandelions can be kept under control by preventing flowering.

Crab-grass, the pest of very many lawns, is an annual, the seeds of which are carried in by means of birds, chiefly sparrows. Where it appears it must be bodily raked up, as the lawn mower will not cut it, since it creeps along on the surface of the ground below the cut level of the well kept lawn. On account of its manner of growth it must be literally grubbed up by a sharp
iron rake. Badly infected lawns should be dug over and remade.

The presence of moss on the lawn indicates insufficient under drainage and is to be remedied only by putting in proper drainage. Surface dressings of lime may give temporary relief, but nothing more.

While it is better to dig out rank growing weeds in the fall rather than in the spring, still it is better to do it in the spring than not at all. Constantly reseeding the surface of the lawn with a high grade lawn seed mixture will do much towards keeping out the weeds because of the mathematical fact that two things cannot occupy the same place at the same time. The best way to keep out the weeds is to keep in the grass.

Chick weed is best raked out before it is permitted to flower. It can also be controlled by dusting on sulphate of iron.

Brown patches on the lawn may be produced by different causes; one is a fungus which is on the surface and may be controlled by dusting dry Bordeaux mixture on the affected areas. Another source of the brown patch is the working of an underground grub that cuts through the roots, loosening sheets, as it were, of dead turf which may be rolled up. This grub, when not very severe, can be controlled by gasoline which will kill it in the ground. In very severe cases the lawn must be remade after having been plowed and allowed to stand over one winter open to frost. This grub is a large white, fat, sluggish creature, curved into a crescent shape.
MAKING THE LAWN

MAKING THE LAWN. The making of a good lawn depends on the making of a proper foundation. A deep soil such as will make a good vegetable garden is ideal for the lawn.

If the land is very light and sandy, stable manure or other vegetable matter must be introduced. The soil can hardly be too rich or too good for a good lawn.

In a wet situation drain tile, the porous agricultural kind, must be put in to take off surplus water and help aerate the land.

With a proper foundation the surface must be broken up, pulverized, leveled, smoothed and raked over until all large bits of rubbish, pebbles, stone, and other foreign matter have been removed. This will result in the making of a good seed bed in which the seed may be sown.

The surface need not be flat like the top of a table, a rolling contour, indeed, gives a more natural sweep.

Buy the best grass seed that the dealers offer and buy it by weight, twenty pounds to the bushel. In making a new lawn use five bushels to the acre. When subsequent applications of top dressing are made each year, one to two bushels to the acre may be used. Some people prefer to use three bushels to the acre in making a new lawn which, while it will produce a lawn, leaves the way open for weeds and does not give so fine a texture to the grass.

Kentucky blue-grass is the recognized lawn grass. It, alone, has that desirable blue-green color that gives a perfect lawn. It is slow to germinate and to establish itself, therefore the practical
gardener uses a mixture containing other grasses in order to establish a greensward quickly, while the blue-grass is developing; and where the proper soil conditions prevail—alkalinity—the blue-grass will eventually crowd out most other grasses.

Each seedsman has his own particular formula for his lawn mixture. In practice they differ in detail but not in principle, and generally contain about thirty per cent. Kentucky blue-grass, thirty per cent. Red-top, and the balance being made of meadow fescue, crested dog-tails, English rye, and perhaps a few other grasses, varying according to circumstances.

The rye grass germinates in a few days and quickly gives a green appearance to the new lawn.

Kentucky blue-grass must have an alkaline soil. Rhode Island bents and meadow fescue are suited to acid and seaside soils.

The actual use of mixtures is a much debated question and may vary in different places; and in practice the lawn maker will be well-advised to take the highest grade lawn mixture offered by reliable seedsmen. These mixtures are varied in their composition somewhat for shaded places or for clay soils, and rather than make these different mixtures themselves, the lawn maker would be better advised to place reliance upon an established seedsman and use the branded mixtures which are the result of long experience and observations.

For the information of those who may desire to make their own mixtures, or have them made up to order, the following proved formulas are given:

On soils of average fertility and composition, this has given satisfaction:

- **Kentucky Blue** . . . . 10 quarts
- **Rhode Island Bent** . . . . 8 quarts
- **English Rye** . . . . 3 quarts
This is a crude, although reliable mixture. Indeed, it may be called a lawn mixture reduced to its simplest elements. The quantities given in quarts are based on thoroughly recleaned seeds.

A more refined mixture, including a fancy Red-top for filling in during the early years of the lawn and after the English Rye has lived its life, is as follows:

Fancy Kentucky Blue-grass 10 lbs.
Fancy Red-top .... 4 lbs.
R. I. Bent .... 3 lbs.
English Rye .... 3 lbs.

This formula is expressed in weight and may be used as a fair basis of comparison with the preceding formula which is expressed in bulk.

This mixture would give twenty pounds to the bushel, and would be sufficient for one-fifth of an acre, say about eight thousand square feet. Fancy seed is specified in the formula both as regards the blue-grass and the red-top. The twenty pounds weight of this mixture, designated in the trade as a bushel, would, of course, not fill the actual measured bushel.