

Servicing the Putting Green

By C. A. TREGILLUS

WE have reached the stage in the progress of course upkeep where the slightest falling off of the general bloom will bring forth criticism from among the playing members. Rather different is it not, from a few years back when the golfer blamed his luck instead of the greenkeeper because the seasons played the "mischief" with the greens? The advance in the science of greenkeeping has so improved the character and wearing qualities of turf that it has become the accepted idea that perfect putting should prevail, from the opening of spring till the last ball is holed out and the clubs put away for the winter; temporary greens are almost a memory.

We have learned a lot in the last decade from professional sources and from our own experimenting, and it is only natural that the accumulated knowledge of ten years and more should bear good fruit. At the beginning of this era there was not only a dearth of information concerning the treatment of turf, in many sections of the Continent, but of men to carry on. Greenkeeping was then a new and untried art to the army of technicians, committeemen and greenkeepers who now contribute their quota of helpful knowledge to the vast sum of information that is building up around this great industry. Many would be willing to confess now, that they little suspected the intricacies that lie behind the apparently simple routine of rolling and mowing.

The highly developed turf of the putting green is extremely temperamental, and the fact that it can be made to "bloom" continuously through normal and abnormal season, bespeaks the master minds behind the working force. The care is never-ending: the grass must be kept short, yet growing luxuriantly; uniform of texture, having of itself no influence upon the driven ball; free from weeds, disease, pests and other disfigurements; and the surface of a firmness that players can approach with confidence and putt with the certainty that the human quantity behind the club is the only factor of error.

Mowing

During the growing seasons of spring and fall, the grass will gain so quickly

that greens, in good fertility, will require cutting every day or second day. If the mower can get any bite at all, it is well to go over them every day, as this will keep a uniformity of putting length—a desirable objective. Creeping bent being a fast grower, must be particularly watched in this respect, else it is likely to get ahead and produce a fluffiness, that is a cause of criticism of this grass. Greens of pure creeping bent develop such a dense mat of leaves and stems that the mower wheels or roller will ride over the top, and the bed knife fails to make a deep enough cut. If the grass is growing three-eighths of an inch a day, and cut down only a quarter, there will be a gradual accumulation under foot, responsible in part for the fluffiness referred to. It is not unusual to go over the green twice or more when a condition such as this occurs.

Regarding the length of grass to be permitted on the green, there is great diversity of opinion, and many factors enter into the determination of this. Putting green turf grasses may, for this purpose, be divided into two classes; those that grow distinctly upright and have a well defined habit of forming crowns, and those that spread their stems upon the ground in a prostrate fashion. Grasses that produce crowns, as for instance, fescues, cannot be cut too closely since there is fear of injuring the young shoots and scalping the plant thus weakening its whole structure. In addition there is not the need to shave this type of grass because the stems grow upright and can make a thick enough stand that they are undisturbed when the ball runs over them. These have sometimes been described as "hair brush greens," and are fancied by many for their slower putting and greater cushion. With the creeping bent on the other hand, there is not the danger from close cutting once the grass is well established. There is a risk of doing so when the bent stand is young, because then the stolons may be cut off before they have secured themselves firmly in the soil; but when a good mat is obtained, such error is less likely to be made. It is therefore impossible to lay down a definite rule covering this point: one must be guided by the character of the turf and in a de-

gree by the wishes of the players. In some clubs very short, keen greens are preferred, while others like them a trifle slower.

About Green Cuttings

There is much debating over the question of carrying the grass catcher or not. By removing the cut grass, you take away a great deal of potential fertility that, if left, would eventually be used over again by the turf. The objection is raised that clippings left on the grass become unsightly, and clog the surface with the rotting leaves. However, on greens that are cut regularly and frequently, there is not the danger of this that many would suppose. In general practice we find that the clippings are removed; but, nevertheless, the advisability of leaving the clippings on the green might be well considered by those clubs that have limited means of topdressing, and must conserve their resources in every possible way. In the event of carrying the grass catcher, the contents should eventually be taken to the compost heap and not left in a rotting, offensive pile by the green.

Many well-built, undulating greens are marred in appearance by mowing a rectangular or circular putting space in the middle which is quite out of keeping with the outline given it by the designer. It may be cheaper or more economical of time and supervision to cut out a regular pattern than to follow the sweeping lines of banks and bunkers, but in so doing it is possible to ruin the attractiveness and finish of what might otherwise be a green of outstanding character. The artistry of green design should be preserved in every detail. Greensmen should be instructed to make at least two rounds to outline the putting surface before striking across, and to cut in a different direction each succeeding mowing. With creeping bent, this is important to prevent the growth of long unattached runners that will appear when following one direction for many days.

The banks of raised green may be either cut short, or allowed to grow long enough to present a shaggy appearance. Bankers seeded to Sheep's fescue and permitted to become "woolly" have a striking effect: a native touch, that is pleasing to the eye, though often hampering to play. Balls will run to the bottom of smoothly shaven banks instead of being held on the slope, and the bunker hazard considerably reduced. By setting up the bunker mowers as high as possible, these features will

form a pleasant contrast with the smooth putting surface.

Watering

Without water it is practically impossible to maintain a satisfactory turf on the putting green except in favored maritime locations where fogs are a daily occurrence and bring up sufficient moisture for the grass. In inland sections sprinkling becomes a necessity, and at times a regularity. More care should be given to watering than many people suppose, for by injudicious use of the hose it is possible to do as much harm as good. On a free, open soil of a sandy nature, where excess moisture can readily escape, there is but little danger of over-watering, except that quantities of water passing down may leach away valuable plant food. Such a soil type, however, is unsuited for putting greens; they are too lean and, during dry spells, will "go back" in spite of unlimited watering. On the other hand, retentive soils may be "drowned" by ordinary quantities of water if a sudden change of weather retards the natural moisture losses; calm and cloudy days will reduce evaporation to a minimum and surplus water in the ground at this time not only suffocates the roots but assists, to fullest degree, the spread and development of fungus disease. It is unwise to water in the late afternoon when these conditions prevail, as the grass has no chance to dry off before night falls; late night or morning is safest at this time.

While much has been said in the past against watering in the sunshine, there is nothing to prove that such sprinkling has an injurious effect. The chief objection to daytime or afternoon watering is that it interferes with play; people do not like to walk over the wet grass unnecessarily, and if caddies are required to shut off or move sprinklers, they might not be put back in place properly. The best time to water is that which fits in with the regular routine work.

Complaints have been made that hard or chlorinated water, as is sometimes supplied from municipal mains, is injurious to turf. From extensive experiments there has been no evidence obtained that city water has in it sufficient foreign substance to be unhealthy for the grass plants.

Watering Frequency

It has been said that the frequency of watering and the amount put on at the time, influences the root growth: that fre-

quent and moderate applications will produce shallow roots and infrequent, heavy drenchings, encourage deeper penetration. While there may be some truth in such an assertion, there are other and more important circumstances that influence the root range. In the first place the severe close cutting that is practiced will limit materially the development of the plant below the surface and secondly the custom of topdressing permanent greens to maintain fertility will bring the roots to the rich surface layer of soil. Regular watering is a safe rule during rainless spells, not occasional heavy drenchings, sufficient to wet the roots, and moisten the ground below as a reserve for the plant to draw upon, and encourage the greatest depth. One inch of rain equals approximately fifteen hundred and sixty U. S. gallons per green of five thousand square feet, so that a working basis of a thousand gallons, at an application, is about the same as a steady day's rain in the temperate parts of the North American Continent. In dry weather it is usual to add another thousand gallons to the approach, where the soil is clayish, to prevent the ground from becoming too hard, and making pitch shots uncertain.

Rolling

The observations of the last few years shows that the roller is being relegated more and more into the background since it is an established fact that constant rolling, with a heavy implement, packs the soil so tightly that healthy grass growth is arrested. The extent will depend upon the soil; clay formation will harden like concrete, whereas sandy ground is not so affected, if at all. Implement makers, realizing this danger, manufacture light rollers to avoid the evil. Rolling is practiced to obliterate the lumps and hummocks in the turf and, it is said, to improve the quality of the grass. In support of the latter statement, it is pointed out that the grass on lanes and pathways is so much better than the long grass at the side, and this is due to the treading effect thereon. It is the writer's opinion, however, that the scruffing action of foot or wheel preventing the growth of long grass is more directly the cause, and that mowing the grass is more closely drawn parallel. That rolling with an effective roller will iron out inequalities, is not questioned, and it is wise under certain circumstances as, for instance, in the spring to settle the ground after the frost is

out; but, to continually resort to this method is not considered good management. Inequalities in the surface of the green are not so likely to occur when it is properly topdressed and fertilized; and this is by far the more natural way of providing true putting.

Topdressing

This is as much the ordinary routine of green management as watering and mowing, and should be properly placed in the program of work so that each green gets its attention in due course. The frequency of topdressing depends upon the resources of the club—it costs money—but expense on this is saved in other respects, as in seed, rolling, weeding and so on. If first-class turf is required, and particularly so where play is heavy, topdressing is absolutely necessary. Effort should be made to give every green at least two topdressings per year, once in the Spring and again in the early Fall. This should be the minimum, and if the work is carefully planned, need not be beyond the means of any club if they can employ labor at all. Compost is the best material, but failing that good rich topsoil, if loamy, will serve, or mixed with sand if on the stiff side. It is unreasonable to expect a green to hold up without some nourishment. Topdressing applications may follow in quick succession without harm, providing the grass is not smothered; but, from a standpoint of economy, once a month is a favorable and effective practice, at the rate of one cubic yard to five thousand square feet of green surface. It is unwise to topdress when the turf is dormant or semi-dormant, as in the hot, dry months of summer, or when growth ceases in the Fall.

The daily raking of the sandtraps is a routine matter that must not be neglected. In this connection the greenkeeper should have the co-operation of the caddie master who should see that the caddies keep out of the traps. The replenishing of the sand is best done in Winter, when the frozen ground will permit heavy trucks or wagons on the turf without making ruts.

Changing the cup location should take place whenever there is a sign of padding or wear in the neighborhood of the pin. With heavy play over week-ends, this means that it may be necessary to change them on Sunday mornings. Not much damage would accrue from leaving them till the following day, but since many players have their only chance of the week on Sunday, they are entitled to this consideration.