

serious neglect of mowing, for without question it benefits the grass, particularly during the growing season; but the player should be sacrificed rather than the course.

There is no course so hopeless that it can not be helped. Were you to list everything that your course needs, together with the probable cost, it would undoubtedly present a staggering total. Do not let this fact discourage you. If the money that is allowed your Green Committee for upkeep, whether it be one or ten thousand dollars, is properly spent, and the weak spots eliminated one at a time, you will soon find things breaking the right way; and once they start coming they will come fast.

Sodding

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It is often desirable to resod portions and sometimes an entire green. Where it is imperative that a green should not be taken out of play for any considerable length of time, as in a case where it is not feasible to construct a playable, temporary green, sodding offers the most feasible means of getting more desirable turf.

Every golf course that can afford to do so should maintain a turf bed of sufficient size to sod at least an average green. This turf should be kept at all times in putting condition. Emergencies will arise when it will be highly desirable. It offers a feasible plan for gradually transforming the turf of mediocre greens into first-class condition at a minimum of inconvenience to the players. This is now being followed on a few courses where it is desired to change to creeping bent greens planted by the vegetative method.

The Turf Bed

The turf bed should be located out of the line of play but should have a position sufficiently conspicuous to insure its having attention. A turf bed is too often treated like a red-headed stepchild, when it should have the same care as the rest of the green family. It is not necessary to go to anything like the trouble and expense in preparing the turf bed that is usually done in constructing a green. Provided the land is fairly level, free from stones, and naturally drained, all that is necessary is to plow, then harrow, and work it down to a firm, fine, even seed bed. If the soil is poor, some manure or bone meal should be added. Stones interfere with the lifting of the turf. Wet or poor ground will not give satisfactory turf. If the bed is on a side hill it will be more difficult to use a sod-lifting machine. Weak turf can not be handled satisfactorily. The seeding or planting should be the same as for a green.

Preparing a Green for Sodding

The soil on which sod is to be laid should be firm. Where the green does not have to be rebuilt, all that is necessary in the way of preparation is to scalp off the old turf and smooth the surface with garden rakes. It seldom happens, however, that it is not desirable to reconstruct the green that is to be sodded. Many turf troubles are due to faulty construction, as well as the use of seed of inferior grasses. The faults should be corrected,

drainage provided if needed, well-rotted manure added, and any needed changes in contouring made while the green is torn up.

If the green is rebuilt, sufficient time should be taken to let it settle. Loose dirt never settles evenly, and it is a slow process to take bumps and depressions out of turf. The settling can be hastened with water. If it does not rain after the green is built and before it is ready for sodding, it should be thoroughly watered, and then if the soil is clay or silt it should be allowed to dry before anything further is done to it, to avoid puddling. With very sandy soils this precaution is unnecessary. But be sure that the soil is firm and the surface as even as that of a finished green.

Lifting the Sod

Most golf clubs have sod cutters or lifters; some are home-made; others were purchased. One of these is shown in Fig. 1, which is reproduced from



Fig. 1—Using a Sod Cutter

the July (1921) issue of THE BULLETIN. The reader is referred to that number, which contains an excellent article on sodding. Most greenkeepers prefer to have the sod cut into small squares, say 10 inches by 10 inches in size, while others use it in strips 10 inches by 36 inches, or any other convenient size. The character of the turf makes a difference in this matter. Tough, well-matted sod may be handled in larger pieces than weak turf which breaks easily.

Thickness to Cut the Sod

There appears to be no unanimity of opinion as to the best thickness to cut the sod for relaying. We have been making a study of this for

some little time, and now feel safe in making the assertion that it is better to cut the turf not over one inch thick. Turf of that thickness will attach itself to the soil beneath much quicker than will turf which is twice or three times as thick. The reason for this is easily stated. The true roots of plants become smaller and smaller the farther they grow away from the crown. A branch of a root, unless it is diseased, is never larger than the main roots. Roots of turf grasses give off stronger branches at one inch from the crown than they do at greater depths; so they knit into the soil beneath in less time.

We recently took up some creeping bent sods and embedded them in sea sand in our greenhouse. Some of these were trimmed to one inch in thickness, others two inches, and still others three inches. After they had been allowed to grow for a month they were taken up and the new root growth observed. The two and three-inch sods had long roots extending down the sides which had come out from near the surface, but there were scarcely any which had come out from the bottom. There were many more roots from the bottom of the one-inch turf than from the others. We are not at all sure but that sod one-half inch in thickness, if it is kept moist, will not give quicker and better results than will that which is thicker, but for practical purposes sods one inch in thickness will prove satisfactory.

Sod cutters, such as the one shown in Fig. 1, cut turf fairly uniform in thickness. If care is exercised, the same may be done with hand tools, as illustrated in Fig. 2. But a much better job can be done if the turf



Fig. 2—Lifting Sodds With Hand Tools

Courtesy of Macmillan Co.

is cut a little thicker than is necessary and all sods trimmed to exactly the same thickness. This can be done in a trimming box, which consists of a flat bottom a little wider than the sods, with sides not over one inch in height. There should be a strip, the same height as the sides, across one end to hold the sods from slipping. For convenience, the trimming box should be supported about three feet from the ground.

The sods are put in this box, dirt side up, and the surplus dirt trimmed off with a sharp draw-shave, scythe blade, or any similar instrument. We know some will say that this is fussy work and unnecessary, but we have seen several jobs of sodding recently where the time spent in trimming the sods to a uniform thickness would have saved several times the amount of labor that would have to be done to get an even putting surface.

Laying the Sod

Fig. 3 shows one method of laying the sod. The work may just as well be done from the other direction if the footprints are kept smoothed out of the strip on which the sod is being laid. It is easier to do this extra raking than to move the boards and work in such an uncomfortable position as the man laying the sod in the picture has to take. It would be worth while to take a few lessons from the men who lay paving blocks. The sod should not be crowded together in an attempt to obliterate the seams. New growth starts out first from near the edges of the sods; so a little space should be allowed or there will soon be lines of thicker grass where the sods are joined.



Fig. 3—Laying the Sods on a Green *Courtesy of Macmillan Co.*

Finishing the Job

In taking up and relaying sod much care should be taken to see that it does not become dry. It would seem that the need of keeping live turf moist would be obvious to the dullest laborer on the job. But we see sods lying around in the hot sunlight for hours, sometimes for days, with no watering; and still they wonder why the turf turns brown and dies when it is relaid. If it is hot, dry weather when the work is done, the newly laid turf should not be left more than an hour or two before it is watered, and then it should be kept moist.

After the sod is all laid, it should be given a good top-dressing, which must be worked into the crevices, and then it is well to roll the green. Whatever else is done, do not neglect to keep it moist. Fertilizers, especially the highly soluble ones, like ammonium sulfate, are not desirable on newly laid turf. What it needs is water—not so much that the green becomes sappy, but enough to keep it moist.

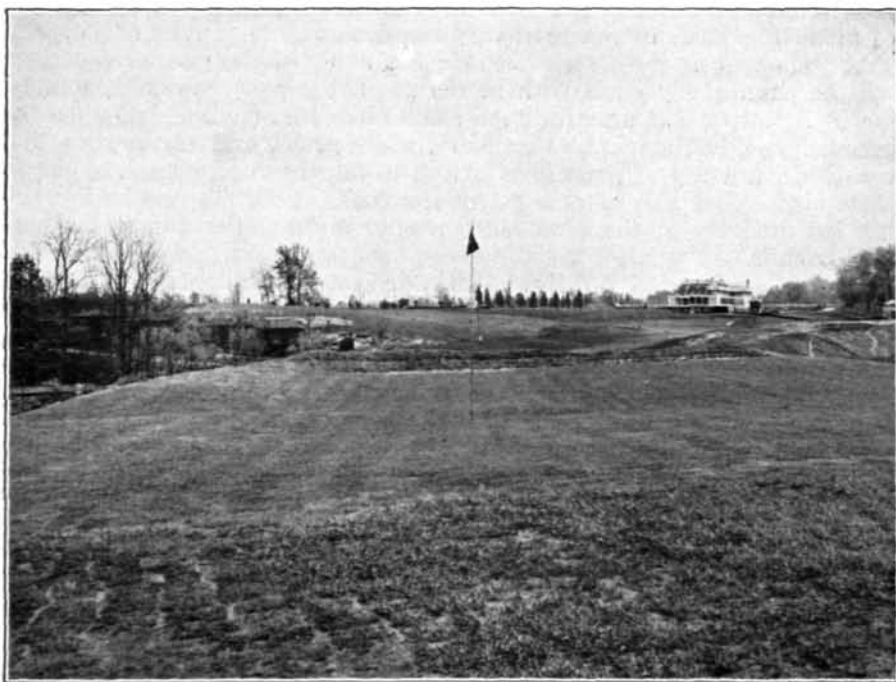


Fig. 4—A Green One Day After Being Resodded

Playing on Newly Sodded Greens

It tickles the pride of the person who supervises the sodding to be able to say that the green is put in play immediately, and if the work is properly done it should be smooth enough to putt on. Playing on the green probably will do little, if any, harm. It would be safer, however, to give the sod two or three weeks' time in which it is not disturbed with trampling, thus allowing it to knit together and send its roots down into the soil below. Remember that the future growth of the grass depends not so much on the way the sod was laid as whether or not it forms an intimate connection with the soil beneath.