

THE GOLF COURSE

A MONTHLY BULLETIN DEVOTED TO THE DISCUSSION OF MODERN METHODS AS APPLIED TO GOLF COURSE CONSTRUCTION AND UPKEEP

Modern Golf Chats

By A. W. TILLINGHAST

FEATURING PUTTING GREENS

THERE are people whom we may meet casually whom we forget after going our respective ways, for there has been nothing about them which leaves even the faintest impression behind. We may look into their faces and vaguely recognize a general type; then we promptly forget the face and the man.

Sometimes in the passing crowd our eyes rest for a moment on a strange face, so strong, finely chiseled and so filled with character that although it is gone in a second our fleeting glance has indelibly stamped the features upon our memory.

Now, we are chatting on golf and not faces, but there is a parallel. A putting green has features just like a human, or, at least, it should have to be worthy of the name. Of course, there are many which are no more impressive than the vacant, cow-like expression of some people, but then again there are some with rugged profiles which loom head and shoulders above the common herd, and the moment we clap eyes on one of these, impulsively we murmur, "Ah! there's a green for you!"

The character of the putting greens and their approaches mark the quality of a course to a far greater extent than

anything else. No matter how excellent may be the distances; how cunningly placed the hazards, or how carefully considered has been the distribution of shots,—if the greens themselves do not stand forth impressively the course itself can never be notable.

The best players will tell you that they like to play to a green that stands well up in the back. This is not a new observation, and yet the country is fairly cluttered with symmetrical, "pancakey" greens, which slope away from the line of play in a most brazen manner. They are utterly worthless and heartily cursed by every true golfer, and yet, strange to say, a great many similar putting greens are being built to-day. Such ignorance is inexcusable.

Naturally, those greens which are to be gained by lofted shots from iron clubs should slope more into the shots than those which, under ordinary conditions, are reached by the finish of balls running from wood. The irons are designed to impart underspin or "stop," and unless the green faces properly this spin cannot become effective. No matter how crisply played by master hands, a ball falling upon a receding green can get no bite. So our first step toward supplying our putting greens with character is the considera-

(Continued on page 75)

The GOLF COURSE

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R. O. SINCLAIRE, *Editor*

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THE near approach of the season for purchasing seed, humus, fertilizers, etc., for sowing down new courses and repairing the wear and tear of the Summer's play makes a few words of caution timely.

We cannot impress too strongly upon those having these matters in charge the very great importance of placing orders for Fall requirements immediately. We, the producers, try to do the best we can when a large volume of orders descend upon us and can anticipate the demand to a great extent, but, when demands far exceed our capacity, the result cannot fail to be dissatisfaction to someone. All orders, whether large or small, should be placed at once, whether shipment is desired at once or late in the Fall. By co-operating with us in this way, our customers will aid us far more than they realize.

Then, too, the present slowness of freight delivery must be considered. While the railroads are doing the best they can under heavy difficulties, freight does not move as quickly as desired in all cases. Allowance must be made for this. On the average, at least three to four weeks should be allowed for transportation of less than carload shipments in order to be on the safe side. We cannot do a great deal to hurry a freight shipment through once it has left our

hands and customers are frequently disappointed simply because enough time was not allowed. For carload shipments of humus in bulk, we also wish to ask for time. The demand for humus is apt to be very sudden and tremendous tonnages pile up almost overnight. No matter what preparations are made in the way of equipment, the necessary labor *cannot* be obtained quickly. It is a well-known fact that all over the country labor is exceedingly scarce and is not to be had simultaneously with the necessity for it. As labor is the principal element in producing humus, early orders will be of very great assistance to us and will enable us to give our customers prompt and efficient service.

The publishers have been the recipients of numberless requests for back issues of "THE GOLF COURSE." They are very gratified at the interest thus shown and have taken it as evidence that our little paper has supplied a real need in the field of Quality Turf Production. If any of our readers desire to have back issues mailed, we will be only too glad to do so, but unfortunately the supply of the first two issues, January and February, has been exhausted. Since these issues, we have taken the precaution to print a large surplus, so for a few months more we can supply sets beginning with March.

PROFESSIONALS and green-keepers frequently request us to advise them where they can secure situations. We shall be glad to furnish the names of competent men.

The Science of Golf Course Construction

GOLF-COURSE construction is now a science, and driving eighteen stakes into the ground to indicate the spots for as many teeing grounds and eighteen more stakes to denote where putting greens shall be developed no longer suffices in links architecture. The days of haphazard construction are nearly done, because the clubs are spending large sums of money on their links and they have learned from experience that not to do the thing correctly in the first place, means the expenditure of further large sums to undo what has been done and start afresh.

The young man of to-day who is looking for a vocation will do well to consider golf from the scientific angle appertaining to course construction or from the angle of a man who can combine the knowledge of greenkeeping with that of clerical duties, so that he can take on the secretaryship of a club and apply himself both to directing his forces on the links and those in the running of the clubhouse.

Just for example take the case of Donald Ross, an expert in this line. It was only a few years ago that he resigned as professional of the Oakley Country Club, after a long tenure, to go to the Essex County Club at Manchester, ostensibly as professional, practically to redesign that course and bring about the many and striking alterations which have developed the Essex course from a second-rate test of golf to one of championship quality. It was only during his work at Essex and as a result of being sought in an advisory capacity by officials of other organizations that Ross realized that golf-course construction is an applied science.

CLUBS WILLING TO PAY.

There never was a time when golf and country clubs were more ready to go deep into the exchequer to provide a first-class golf course than is the case to-day. There never was a time, on the other hand, when the club officials and

influential members were less inclined to make heavy expenditures blindly and find themselves eventually with a fortune of outlay and a second or third-rate course. They are willing to grant the expert's superior knowledge of what should be done, where hazards should be placed, where trees should be cut down, where rocks should be blasted, but they want to know the whys and wherefores.

That is where the blue-print figures. The expert links architect visits the property on which a course is to be laid out or where there is one needing alterations. He goes over the property and makes a minute study of its configuration from a golfing standpoint. He may spend one day tramping over a piece of property or he may spend several days.

The blue-print should then be laid before the club committee, with all the details and specifications jotted down. The committee can study the plans, see what it likes and does not like; ask the architect why he favors this or that, and specify wherein they may disagree with him. They can post the plans for the study of all the members and get a majority opinion on the desirability of the layout as given. Therein is protection for all hands. If the majority of the members are satisfied with the layout as it appears on the plans, and have some idea of the amount of money to be expended, the committee which has to do more directly with the final steps is relieved of much of the responsibility. The architect, knowing that he is undertaking something which involves a large expenditure, feels much more comfortable if he has given the club a fairly definite idea of how the course will shape up in its finished state and has his ideas approved.

HAPHAZARD CONSTRUCTION COSTLY.

The haphazard laying out of links in years gone by has been exceedingly costly to many a golf and country club

in this country. Some of them have the membership and the wealth to undo the damage, but there are others who are obliged to stick by an unsatisfactory layout for lack of funds. There was one such visited by an expert recently, and it was characterized as "hopeless." It was laid out badly at the start, and subsequent changes made the situation worse rather than better. To make this course over into what the expert would consider worthy of his skill would require double what already had been spent. Possibly it could be done in the manner Alec Campbell once suggested as the only way of improving a certain layout, that is, have an earthquake to change the configuration of the land and then use plenty of soil dressing.

There is a course not far from here where thousands of dollars have been wasted because some one, in ignorance of what a good golf hole embodies, put through several fanciful ideas, one of which involved the expenditure of \$12,000 for just one hole, which was played a short time and then abandoned. A large slice of this money was spent on the construction of a teeing ground which now serves as a constant reminder to the Club's green committee of how easy it is to throw away money.

Golf is a game where there is more chance for favorable or unfavorable comparisons of playing conditions than in almost any other sport which can be mentioned. The golfers, especially those who attain sufficient proficiency to make open tournaments an attraction, visit many courses. They soon recognize if their own is inferior to the average, and then begin to criticise or else use their influence to bring about a change. With many a club money is no object, so long as there is a satisfactory return upon the investment, the "return" in this connection meaning a first-class layout. Anywhere from \$50,000 to \$300,000, or even more, is spent on acquiring property, developing a course and erecting a clubhouse. The money invested in golf and country clubs in the United States runs high in the millions; how high would be simply a wild guess.

But the attitude of some men or clubs is reflected in one of the experiences of a prominent architect. He was sought out on this occasion by a man of wealth who had made up his mind that he would have a golf course on a large tract of summer resort property which he owned. He did not feel like accepting the task, for the reason that he concluded it was more a passing fancy than a real purpose, and that the course would be of inferior nature, hence reflecting little credit upon the architect, if not an actual discredit to his ability. His plan was to rid himself of the commission and at the same time to create no hard feelings by setting what he thought a prohibitive figure for his services. He named the figure and was taken aback when the response was:

"Oh, that's all right, perfectly satisfactory. When can you begin work?"

Subsequently the architect found that it was not an inferior summer course he was to build, but one of thorough up-to-dateness and about as interesting an engineering problem as he ever tackled. The sum of \$100,000 in round figures has been spent on that links up to the present with most pleasing results.

So many links are in course of construction that a great field is open to the course architect, but a field which demands close application and scientific knowledge.—*The Evening Post*, New York.

"PIZEN"

One of the members was walking over the same course with the chairman of the green committee and he intimated that there was a great deal of trouble to be encountered. Finally they came to an old stone ruin which had been permitted to remain, with sloping grass banks on all sides, and it provided an excellent hazard. The chairman observed that to make it appear more picturesque, vines were to be planted around its crumbled walls.

"Why not make it poison ivy, and give us all the trouble you can?" drily retorted the other.

Poa Annua in Putting Greens

By PETER W. LEES

Poa Annua, or Annual Meadow Grass, is usually looked upon by grass experts as nothing more or less than a weed, and its presence in a putting green most undesirable.

A great many claim that it is a perennial and not an annual, but this is wrong as its name is quite right and in accordance with the habits of the plant, as it is continually reseeding itself from the month of March until October and sometimes later.

The surface of a putting green has of necessity to be of a very close and even texture, and naturally this cannot be obtained by the use of grasses that will not blend or combine. As is well known to the expert greenkeeper, a perfectly true and smooth surface is absolutely desirable on a putting green.

This can easily be obtained by using a certain mixture of seeds, which blend and produce an even surface.

Naturally, the opposite, a patchy and uneven carpet of grass can just as easily be produced by sowing down with a mixture that will not blend.

A patchy and uneven carpet of grass is an abomination on a putting green, as it is an impossibility to judge the strength when putting.

In the great majority of new courses nowadays the greens and fairways are sown down, care being taken to select the best seed suitable to the soil, etc.

All goes well for a year or two perhaps when to the surprise of the greenkeeper, if he is of an observant nature, he will notice several small spots of foreign grass appear which to him seems very much out of place among his finer varieties. It is very probable that this is *Poa Annua*, and if it is it will soon assert itself in no uncertain manner.

There is no use trying to kill it out as it is there to stay. The other grasses must go, as it will most assuredly in a very short space of time eventually kill out all the other finer grasses.

I know of attempts which have been

made to eradicate it from greens by the process of weeding, but the results have always been a failure.

The question may be asked (and in my opinion it is easy to answer) that if it is impossible to eradicate it from the putting green what is to be done to solve the problem?

It may to many seem nonsense when I say cultivate and encourage it as much as possible, should *Poa Annua* appear in your greens. This is a bold assertion to make and many may not agree with me, but after careful study and experience I have come to the conclusion that if properly treated *Poa Annua* will render itself capable of being turned into as fine and true a surface as the most fastidious golfer may wish to putt on. I am of the opinion that if it were possible to collect the seed seedmen would have a very large sale for it, but being of a dwarf habit it will remain almost impossible to buy, at least in large quantities.

Its power of resisting drought is very well known and it is invaluable in dry and hot climates. It has been said that the appearance of *Poa Annua* in a green is a signal to the greenkeeper that something is wrong and nourishment is required. In regard to this I wish to take exception, as I myself have seen, on some of the best nourished greens in America, as well as on the other side, *Poa Annua* surely and certainly killing out all the other grasses. Attempts have been made to kill it out in several ways, but up to now, as far as I know, none have been successful. The problem is a big one seeing on account of the fact that it is continually seeding and the seed is being carried about by the wind.

From the foregoing it can be seen that I am not one who would take drastic measures against *Poa Annua* but on the other hand I would treat it in the right way and encourage it all I could. As I have said, and I say it again, if properly treated a fine smooth wear-resisting carpet of turf can be got from *Poa Annua*.

One great asset *Poa Annua* possesses

is its power of resisting drought. It may go brown when a drought sets in but at the first shower it is the first to get back its strength and color.

In patches *Poa Annua* is undesirable on a putting green, but uniformity all over the green gives an even true putting surface very easily.

In conclusion may I be permitted to say that amongst the finest putting greens in America, if not the best, were greens composed of nothing but pure *Poa Annua*, which had gradually killed out all fine grasses that had been sown.

Let me not be misunderstood in the foregoing in championing *Poa Annua* in the way I have done, as I have only dealt with it where it has appeared and established itself, as I do not for one minute say or assert that a somewhat better carpet of turf cannot be obtained by using and treating the finer varieties of grasses, but a *Poa Annua* green may be as fine as desired.

Autumn Sowing and Renovation of Golf Courses

By L. MACOMBER

THE best time of year to sow down new putting greens, fair greens, tees, lawns, etc., is between about the 15th or 20th of August and the 20th of September. The soil is warm at the end of the Summer season and sufficient rain and dew may be expected which will effect a quick germination and the young grass will become well established before the cold weather arrives. Then weeds are less in evidence in the Autumn than they are in the Spring, but it is always a good policy in sowing down new ground to turn over the soil and do the necessary grading in the Spring or early Summer—cultivating frequently to destroy any weed growth, so that when the seed bed is prepared, the soil is much cleaner and freer from weed seeds and the surface is consolidated. When work is

done in a hurry, it is generally badly done.

Topdress and renovate all existing turf on a much larger scale in the Autumn than in the Spring, using more seed, sand and compost; and improve parts of the fair greens that cannot be artificially watered.

We have had a very wet Spring and many courses especially on clay soil, have been in a very sticky, muddy condition most of the season. The excessive rain and dampness has no doubt caused sourness, and this should be corrected this Fall with a dressing of ground limestone on the fair greens, tees, etc., and pulverized charcoal together with previously sweetened composts and sand on the putting greens.

This has been a bad season for clover and water grass, or pearl wort, because of so much rain. Existing turf has thrived but Spring seeding has in many instances not been satisfactory—as heavy rains have caused washouts and uncovered the seed, but in other cases results have been good and it has been fortunate there has been so much rain.

Highly nitrogenous fertilizers should be used this Fall to encourage the grasses and not the clovers. While bone meal is a good fertilizer and best applied in the Autumn, it would not be advisable to use it this season on greens possessing much clover. It will quite often produce a thick crop of clover in a turf apparently free from clover.

The last of August or the first of September, according to the weather, the putting greens, tees, and important parts of the fair greens should be vigorously raked and cross-raked and on large areas tooth-harrow and cross-harrow, so as to open up the surface soil, and in some instances it may be advisable to use pitch forks, spiked boards or spiked rollers to perforate the surface.

Take out all weeds, crab grass and other objectionable growth, at the same time scratch up any clover patches. Then thicken up the existing turf with

a special mixture of seed suitable to the soil and local conditions and cover with a quarter-inch dressing of prepared compost or humus, supplemented with a complete artificial fertilizer. Work the seed and covering soil into the existing turf with birch brooms or the backs of rakes and then roll down. On large areas after tooth-harrowing the ground, it is much better to mix the seed and compost together and apply them at the same time. On heavy soils, include a large percentage of sand and organic matter and on light sandy or gravelly soils, apply dressings rich in humus or organic matter.

The last of September or some time in October, during wet weather, lime any sour parts on the fair greens, tees, etc., and dress the putting greens with sand and pulverized charcoal, using from 200 to 300 pounds of charcoal per green mixed with three or four times its own bulk of sharp sand. Work same into the turf with birch brooms or the backs of rakes.

Then before the cold weather arrives, give the greens another quarter-inch dressing of prepared compost, but do not use any quick acting fertilizers. This will serve as a covering for the young grass from the Autumn sowing and the writer has never favored covering the greens with any straw or other material for the Winter, unless it is put on very thinly, so that the turf can be seen through. Grass does not suffer from the cold weather as it does from the hot weather; winter-killing taking place in the early Spring when the surface drainage is not correct and water is lying in the low spots alternately freezing and thawing.

Order your seed and fertilizer requirements early. If you are planning to sow down any new ground—sow the putting greens at the rate of two ounces of seed per square yard and the fair green at the rate of at least eight bushels or 200 pounds per acre. In renovating existing turf use about half these rates.

A-DREAMING

As jewels are like unto cinders;
As gold may be traded for lead;
So my very worst golf may be likened
To the dream shots I play in my bed.

For everything then is like chaos,
And nothing goes right, so it seems;
May kind heaven defend and preserve
me
From the golf that I shoot in my
dreams!

I'm driving sometimes round a corner,
Through narrow town-streets, with
the flag
At the end of some twisting, dark alley;
And the cup in a "Bull Durham" bag.

But often a million spectators
Line a fairway—width, only one
yard;
And the driver-shaft, hinged in the
middle,
I've got to keep straight, but it's
hard.

Invisible hands check my swinging
While two extra thumbs spoil my
grip;
And my snow-shoes get snarled when
I'm putting,
But in full-shots my roller-skates
slip.

My caddies are gnomes, sometimes
ogres;
They make me play just as they
will—
Maybe putt a balloon with a razor,
Or try a base-viol on a pill.

The bunkers? By Gad, they are awful!
When in one I give up all hope,
For, you see, all I have to get out with
Is an anvil attached to a rope!

And so I play on to the morning,
With fozzle and swipe, all through
Hell;
But why waste all these words to
describe it?—
For I guess you have been there, as
well.
A. W. T.

Putting Green Drainage

By J. G. KANTER

WE frequently find, in going over the putting greens of many courses, that comparatively very little attention is paid to artificial drainage. Time and money is uselessly spent in a fruitless attempt to improve the turf on a poorly drained green.

As soon as the surface becomes mossy it seems to be a signal in general for a Spring or Fall liming, and, of course, seeding, to rejuvenate the bare spots. Lime undoubtedly assists in neutralizing the soil, but if the drainage is poor, one can only hope for a temporary improvement. Therefore, the only positive method by which permanent results can be obtained is artificial drainage.

Of the different drainage systems in vogue, we believe the herring-bone method will give the best results.

If it is desirable to save the existing turf, it is advisable to perforate same with a perforating roller or tamper, and apply one-quarter ounce of hydrated or air-slacked lime to the square foot and water in. This should be done four or five days previous to the removal of the turf.

Remove the turf in the manner described in the June issue of THE GOLF COURSE, and pile carefully in a shady place. All the top soil should be carefully removed and piled some distance from the putting green, so the subsoil will not be incorporated therein.

Next remove as much of the subsoil so as to obtain a depth of two feet at the upper end and three feet at the

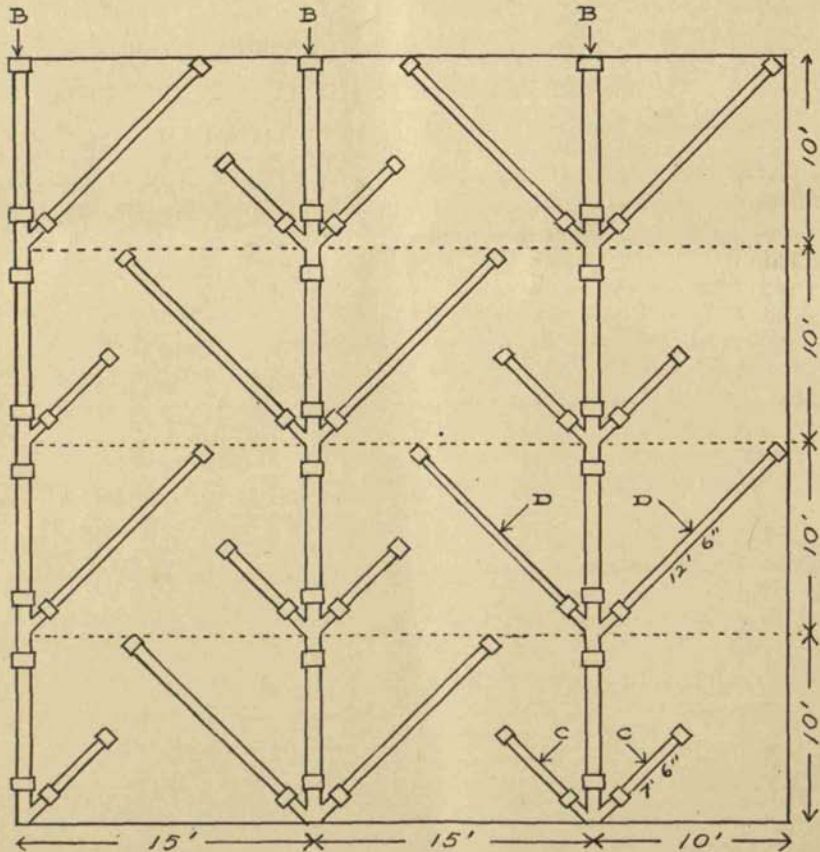


FIGURE 1—Sample Plan of Drainpipe Arrangement

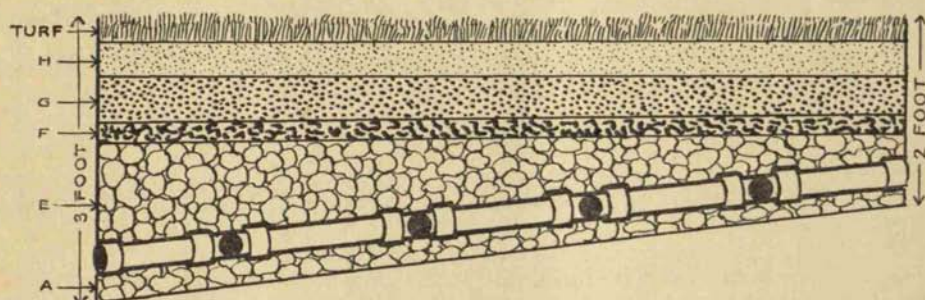


FIGURE 2—Section Through a Main

lower end, that is, three feet at the end toward which the water is to flow.

Cover the bottom with a layer of three-inch stones (as in A, Fig. 2), and ram down hard, as the foundation of the drains.

Procure a sufficient number of four-inch porous tile for the main drains. Lay the first main ten feet from the right or left-hand side of the putting green and running from end to end, in the same direction as the pitch. The balance of the mains are to be laid fifteen feet apart (as in B of Fig. 1).

For subsidiaries, use three-inch porous tiles, starting from the deepest end of the main drain, which has been laid ten feet from the water edge. For the first subsidiaries, lay two seven-foot and one-half foot lengths branching into the main (as per C of Fig. 1), connecting same with a three by four-inch 45° connector (with collars). Ten feet from the connector on the same main, lay two twelve and one-half foot sections (as at D of Fig. 1), and proceed to lay and connect to the main drains the seven and half-foot and the twelve and half-foot lengths alternately, giving the subsidiaries a 45° angle to the main. Care must be taken to give them a slight pitch toward the mains to avoid arresting the flow of water.

Porous tile usually comes eighteen inches long and has no collars, therefore, in the vicinity of trees or shrubs, it is advisable to set such joints in cement to prevent the roots from entering and choking the drains. Otherwise just butt the ends together.

Along both sides of the drains place a run of four-inch stone to hold the drains in place. Cover the opening with several four or five-inch stones to prevent clogging, but so as to give access to the water.

Cover the tile with a layer of three-inch stones and ram down, being careful not to break the pipe, then fill same up to a level (as in E, Fig. 2), and ram down, after which a two-inch covering of clinkers, cinders or gravel (as per F of Fig. 2). Water and ram down hard. Next fill in six inches of subsoil (as per G in Fig. 2) and ram down and roll with a two hundred or three hundred-pound roller, after which make the desired undulations and cover with a four-inch coat of topsoil (as per H of Fig. 2). Then replace the turf. If this is properly done, the green will be ready for play in a very short time.

Many of the articles we publish from time to time are at the request of some reader. We hope that should there be any subject in our field that could be taken up with profit to the other Green Committees, our readers will feel free to tell us about it. Many Committees have discovered new kinks in overcoming difficulties and we would be very glad, through the medium of "THE GOLF COURSE," to bring them before the golfing world.

CORNELL SYSTEMS

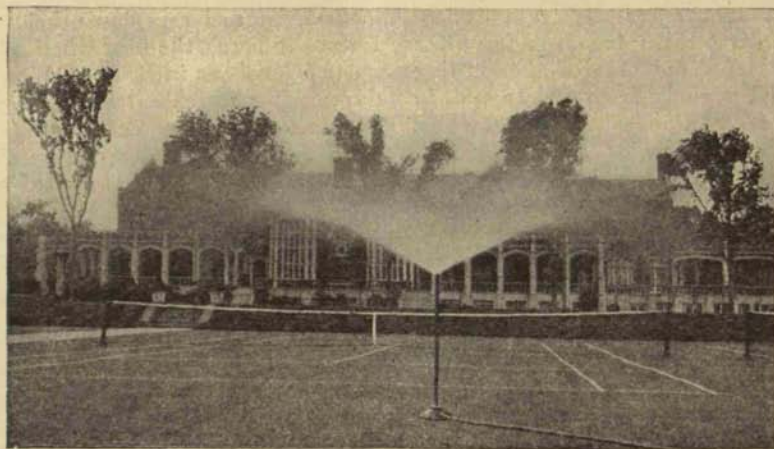
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Modern Golf Chats

(Continued from first page)

tion of the type of shot which is to find that green and construct with that thought ever uppermost.

Nothing can supply a green with more character than bold undulations, and nothing can make a green more ridiculous-looking than puny little kinks which some will insist are undulations. The long, gentle slopes make putting a fine art, and as the cups are changed from day to day, variety is introduced and the rounds are never monotonous. But in introducing undulations the builder of courses must consider the shot which is to find the green. What could be more unfair than the introduction of pronounced undulations in a green upon which the player is supposed to pitch? It is obvious that two balls, each receiving the same amount of under-cut, might strike within a foot of each other, one on the ascending slope and the other just beyond, where the ground falls away. Every golfer knows the action of these two balls and appreciates how much the element of luck has figured. Consequently, undulations should be reserved for greens other than those upon which we are to pitch.

The manner in which the guarding pits are built into the sides of the putting greens is most important. Shallow traps are of little value either as

hazards or impressive features. Generally, we depend upon the earth from nearby pits for the fill with which our greens are built up, and if the greens are conceived boldly the traps will take care of themselves. In my opinion, there is little excuse for digging pits less than two feet six inches deep and up to five feet. Naturally, the deeper pits must be of greater area.

Sometimes water will not permit the digging of pits to any considerable depth. Then it is necessary to build the pits from the ground up, as it were. But if our hazards are to provide character for the greens, they must be something more than holes in the ground. Their shapes should be irregular, and the mound work, ruggedly natural.

In building greens in flat country, the use of scoops will be found to be very valuable. With them, grass hollows of considerable extent may be formed, pulling the earth to the green site and thus creating a plateau, which will appear even higher than reality because of the break of the hollow in front.

In our limited space it is possible to touch but lightly upon this topic of green character, but the main thought is here: Construct your greens boldly and naturally, remembering at all times from which side of the fairway the approach is to come and the character of the club with which the approach is to be made.

The 1916 Edition of Carter's Practical Greenkeeper

is ready for distribution. Every Green Committee should have this useful handbook. A copy will be sent free to anyone interested

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3—The **Drive Wheels** have malleable hubs, steel spokes, wrought-iron rims and are made fast to shafts which turn on ball bearings inside the grease case. (All wear easily taken up from inside of case.)

4—**No springs are necessary** to keep the back roller from jumping up, as the Lawn Mowers are swung from the main frame by large friction surface hangers, which hold it down.

5—A single lever at the operator's right enables him to lift all three cutting knives free from the ground at once. It also permits him to throw out of gear all three revolving cutters without leaving his seat.

6—The weight of the super-structure and operator is evenly divided over the three Lawn Mowers. The combination of the carrying frame and a very simple draw rod mechanism makes one of the most desirable features of this machine, and it is this combination that makes absolutely positive the accurate position of the rear machine relative to the two front machines, insuring at all times, and under all conditions, the proper overlapping of the cuts. This valuable feature is found only in this machine.

This style of machine is designed for cutting wide swaths on grounds that are settled and dry, also where rolling and fine cutting are not the first consideration. On fine lawns where the turf is right and where pride is taken in having fine cutting and a beautiful velvety surface, free from horse marking, streaks, etc., there is only one type to use, that is the motor-driven Lawn Mower, which rolls the lawn every time it is cut. We make several varieties of this type, including both the "Walk" and "Ride" types, circulars of which we will be pleased to furnish on application.

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