

Soil Factors and Their Control

IN THE preceding chapter of this series, we discussed "Soil as a Medium for Growth and a Source of Plant Food". Successful turf culture and maintenance requires not only a thorough understanding of the physical constituents and proper classification of soils but, of equal importance, a sound knowledge of auxiliary soil factors and their control. Moisture; drainage; mineral plant food elements; soil reaction; beneficial soil organisms and how they work—these factors offer an interesting and constructive study.

AMPLE MOISTURE: Water exists in the soil as hygroscopic moisture, gravitational and capillary water.

The moisture which condenses on the surface of a dry soil when exposed to the air is hygroscopic water. It never exceeds several percent and is held so tenaciously that it is unavailable to plants.

Gravitational water is the surplus water free to move downward by gravity. If retained by the soil it fills the voids and thus deprives the roots of needed air. Where natural drainage is inadequate, one of the first essentials to turf production is rapid removal of gravitational water by artificial drainage.

The water held around the individual and compound soil granules as a film is capillary water. The surface on the outside of the film acts as an elastic covering or skin, and is responsible for its movement. When water is removed by roots, or by evaporation, the stretched skin pulls water from adjacent areas until the strains become equalized.

Area of internal soil surface determines capacity to retain and ability to release water to the roots. Soils made up of small sized particles contain the largest area of internal surface, so they have the largest water-holding capacity. Loams and clay generally retain two to three times more water than the coarser sands.

Water is taken by roots most readily when the films are thick. Intake decreases as the films become thinner, and finally ceases although the soil may still contain capillary water. Plants then begin to wilt. Because of the

smaller area of internal surface, less water is required on sandy soils to produce a thick film than on the heavier soils with more extensive surfaces.

The effect of drought appears first on sandy soil because of its low water-holding capacity. Yet light showers, wholly inadequate on heavy soil, often produce startling recovery on sands, because less water is required to produce thick films.

The diminishing supply of available water in the surface soil is partially replenished by movement of capillary water. Movement is most rapid in sands; heavy soil moves water to greater heights but rate is often so slow that plants may perish before sufficient water is brought up from below.

ADEQUATE DRAINAGE: Excess water beyond that required to produce films is of no value. It reduces soil air, retards early warming of the soil in the spring; may cause severe injury during the winter or during hot humid summer weather.

Surface as well as subsoil drainage is important. Depressions and pockets which hold water should be avoided, and if soils are heavy and compact tile drainage is needed. Seepage water along hillside slopes may cause damage in spring or fall. A line of tile placed at right angles to the slope will intercept the seeping water and prevent damage. After placing the tile the trench should be backfilled with pea gravel or cinders to within eight inches of the surface, otherwise water will pass directly over the tile and lead to the erroneous conclusion that tiling is ineffective.

ABUNDANT MINERAL PLANT FOOD ELEMENTS: Soils usually contain an abundance of all the elements needed by plants, but may be deficient in one or more of these: nitrogen, phosphorus and potassium. Sometimes these three are referred to as ammonia, phosphoric acid, and potash, respectively. Occasionally on very acid soils, calcium deficiency occurs and in some instances, particularly along the Atlantic Coast, magnesium also. Need for the rare elements is most likely on sandy soils of the Coastal Plains Section and on calcareous, alkaline soils.

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Since nitrogen occurs in the organic matter, dark colored soils contain more nitrogen than those of light color. However, the humus of dark soils may be so resistant to further decay that nitrogen need may be acute. Phosphorus and potassium exist in the mineral fraction; and are most abundant in the finer silt and clay separates. In general, sands may be deficient in all three elements; the heavier soils are usually high in potassium, may need phosphorus and almost always require nitrogen.

In order for soil nutrients to enter the plant, they must be present in the soil water in soluble forms. At any one time the soil solution never contains a sufficient quantity of soluble nutrients to satisfy plant requirements for an entire season. Hence a fertile soil is one which rapidly replenishes the soil solution when plant demands are heavy.

According to the present concept, essential plant food elements exist in the soil as dissolved salts, as easily soluble compounds and as difficultly soluble substances. Because the soil solution is very weak, the amount of readily soluble material, not quantity of soluble salts, determines ability of soil to supply essential nutrients. Hence most of the new rapid chemical soil tests attempt to measure the easily soluble, rather than the water soluble elements.

SOIL REACTION: Soils may be acid, neutral, or alkaline in reaction. In humid regions, soils tend to become acid due to the leaching effects of rain.

Present practice is to express reaction in terms of its pH equivalent. By this method the figure 7 represents neutrality; lower figures denote increasing acidity; figures above 7 represent increasing alkalinity. Most plants grow best in a pH range of 6 to 8. Grasses exhibit marked differences in their ability to withstand acidity. Bents and fescues continue normal growth in soils too acid to support blue grass. In fact this may account for the predominance of these grasses in some districts where acid soils prevail. For Kentucky blue grass, readings below pH 6 must be looked upon with suspicion, but the limit for fescue and bent is lower, probably close to pH 5.5.

Besides its direct effect on plant growth, reaction affects physical soil condition, activity of soil organisms, and availability of plant food elements.

With strongly acid heavy soils, extreme acidity reduces water-holding capacity and adversely affects its physical condition. Acid clay does not form aggregates. The use of lime increases water-holding capacity and improves the soil by promoting beneficial granulation.

The activity of desirable soil organisms is curtailed as acidity increases.

Acid soils may be low in available phosphorus, and even added soluble phosphate may become fixed in relatively unavailable form. This type of fixation is not likely to occur when soil reaction is pH 6.2, or more. Extreme alkalinity may render iron, manganese, and other so-called basic elements unavailable. Hence, for all practical purposes, soils near neutrality are probably best, although reasonable acidity may be an advantage to discourage clover and weeds.

BENEFICIAL SOIL ORGANISMS: A fertile soil teems with vast numbers of minute microscopic organisms, especially bacteria, but fungi, algae, and other forms are also present. They are the scavengers of the soil, being responsible for the decay of applied plant or animal residues. During decay complex organic forms of nitrogen are converted into ammonia first, then nitrites, and finally into nitrates. Other essential nutrients are released also. The carbon dioxide formed during decomposition augments that excreted by the roots and aids in the solution of insoluble soil minerals.

The conditions favoring maximum activity of soil organisms are: a supply of decomposable organic matter; temperatures favorable for growth; desirable soil reaction; and the presence of needed nutrients. In general these same conditions are required by growing plants.

ABSENCE OF TOXIC SUBSTANCES: Occasionally grass growth is inhibited by the presence of toxic substances. The use of bordeaux to control fungus disease, or the excessive application of corrosive sublimate, or soluble fertilizers, may check growth or kill the grass. In water-logged soil the products of bacterial decay may prove toxic. If the soil is well aerated and kept in good physical condition, there is little danger of toxic conditions developing, unless harmful materials are actually added.

(To be continued)

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FREE OF WEED SEEDS AND HARMFUL ORGANISMS

IF YOU MUST PLAY ON SAND

By ANDY HIGH

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AT BEST, sand greens never have been and doubtless never will be more than a bastard child of golf; yet without doubt, climatic conditions and club financial conditions will foster sand green courses from now on until some miraculously found substitute for grass may replace them.

My golf work, for fourteen years, has been founded, fostered and grown on sand greens. I have often marveled after each round of golf played on grassed greens, how it is possible to shoot anything but subpar golf on sanded courses, usually almost totally devoid of traps, trees, water and bunkers—on greens where to miss a five to ten-foot putt is an exception rather than a rule. Yet, again, when I think of how from 175 yards the usual sand green looks about the size of a handkerchief and that to hit the green a man is more in need of a rifle than a golf club, it does not strike me so odd that the best of golfers can slip into the 80s.

How Sand Greens Compare with Grass

That idea leads me to a consideration of the size of sanded greens. Let us say, for an average, the diameter of a rounded green is forty feet; it would fit with room to spare in the northeast corner of an average grassed green. In a minor relation to this very fact I would like to, here and now, say that I have yet to hear a golfer, after placing his hand upon the soft and burning hot texture of a sand green or after observation and speculation on the sight of one, say, "Isn't that green beautiful." There is much meat back of that lack of esthetic appreciation of our sand green golfers for their greens.

Returning again to size. The first logical reason for the smallness of sand greens is that most all sand greens necessitate a flat, smooth surface from lie to the cup. To have a green of such dimensions that it may be necessary to drag a path sixty feet to a cup entails such work and drudgery that the golfers would rebel. Such dragging would also tend to pile quantities of sand either near the cup or near the edge of the green, according to which way the green was smoothed. Also, it would be difficult to drag in a straight line unless it was done from cup to ball

and the ball set to the line. This would automatically mean that eventually all the sand would be on the edge of the green rather than to be distributed equally over the green. This is in terms of a green 120 feet in diameter, with the cup in the center of the green.

It may be well to note here that daily, semi-weekly, or weekly change of cup location is impractical in sand greens because the base under the sand bakes to a hardness next to rock in the summer. It would require an excessive amount of work to change even nine holes. Besides, the average sand green is so small there is little premium on placement of a long shot to the green.

Next to size, the most unfortunate feature of sand greens is the monotonous regularity of their shape. In building and placing grassed greens, the practice is to conform with nature or to introduce artificial roll. But sand greens are almost invariably round, square, or rectangular. To save work they are made small, to save more work cups are set in the centers permanently, to defeat the erosion of nature they are ugly square, round or rectangular boxes in side hills. Each is perfectly flat.

Here's How Not to Build Them

The construction history of an average sanded course runs hand in hand with this story. A banker, a baker, a groceryman and a barber, all with a common love for our beloved game, put their heads together on why Hometown can't have a golf course. They select an available piece of land, usually unfit for farming, close to town and in some manner secure it either by lease or by floating stock. The money raised never is enough to buy the land.

After the lease of the land the crime begins. Nine holes are needed for a start and 160 acres provide plenty of room

to place nine holes in any fashion as may please this gallant four. Seldom does even one of the four have more knowledge of the game than of hitting a ball (and I did not say swinging). It doesn't make much difference where they start the course. The banker thinks it a good idea to start No. 1 down this side hill. (The banker is a topper and this means he is sure to get 200 yards with the best shot that he has.) Moreover he was the real support in the raising of the necessary cash to lease the property.

When this four reach No. 5, they run across a small dry draw and the barber thinks it might be nice to be confronted with a sporting carry, especially should there ever be some rain to fill the draw. The banker does not like this (it is changed later), but as they were all so nice about the start of No. 1 he will agree to this. When they get on to No. 6 and No. 7 they find themselves stuck a long way from the place they started. Which means a long 4-par up a side hill, followed by a 5-par, which wanders over the greater share of the 160 acres.

The only thing to do is to go back and relocate a few tees and cups until the way home becomes within reason. This means that the placement of about four out of the nine greens is an expediency and without architectural reason. It is silly to add that no relief map is on hand to help.

Thus were the original nine holes—the basis for the later development of eighteen—laid out, an unjust affliction to those who later entertained a desire to play golf and enjoy the privilege of the course. The scheme failed to provide a place for future clubhouse, the swimming pool, the tennis courts, the practice fairway and green.

Tells Plan

For Course Layout

Here is what should have been done: A relief map of the terrain can be drawn with a small amount of labor and from this we can capitalize on the flat hilltops and hollows for placement of greens to defeat erosion. We escape building up terraces and great amounts of resodding to get a level base, thereby preserving the beauty in nature rather than destroying it by digging holes and building mounds.

In laying the course for sand greens, green placement must be picked first—

then work back to the tee placement; it is far less work to build a tee than a green. This overcomes the first of our problems in making the green pleasing to the eye—a natural contour is controlled and utilized rather than artificially induced.

Greens Need Not Be Flat

Sand greens do not necessarily have to be flat, for they will support a slight grade without difficulty. Advantageous use of the natural roll will relieve monotony. In placing the green in conjunction rather than in opposition to the natural roll of the land—hill-top or depression—it will bring the only near approach to the harmony of grassed greens. Also, it avoids the necessity of building the greens round, square, or rectangular. The outer edge of the green can follow the irregular curvature of the natural location. This in turn gives opportunity to build larger greens, and to place cups in off-center positions to give a just premium to a well-placed shot.

The green placed on a hill-top has natural drainage; whereas the green in a hollow must be protected from side-hill drainage and erosion—that is, the wash of dirt and residue which will destroy the texture of the sand.

The simplest way to control side-hill wash is to place grassed traps about the green in such fashion that they serve not only as hazards but form a natural protection to the green. All such hollows should have open ends to permit natural drainage away from the green.

There is little or no room for sand traps near and about sand greens. Such traps destroy harmony by producing a desert effect—too much of the same thing. A sand green destroys an equivalent amount of vegetation—to add a number of sand traps furthers this destruction.

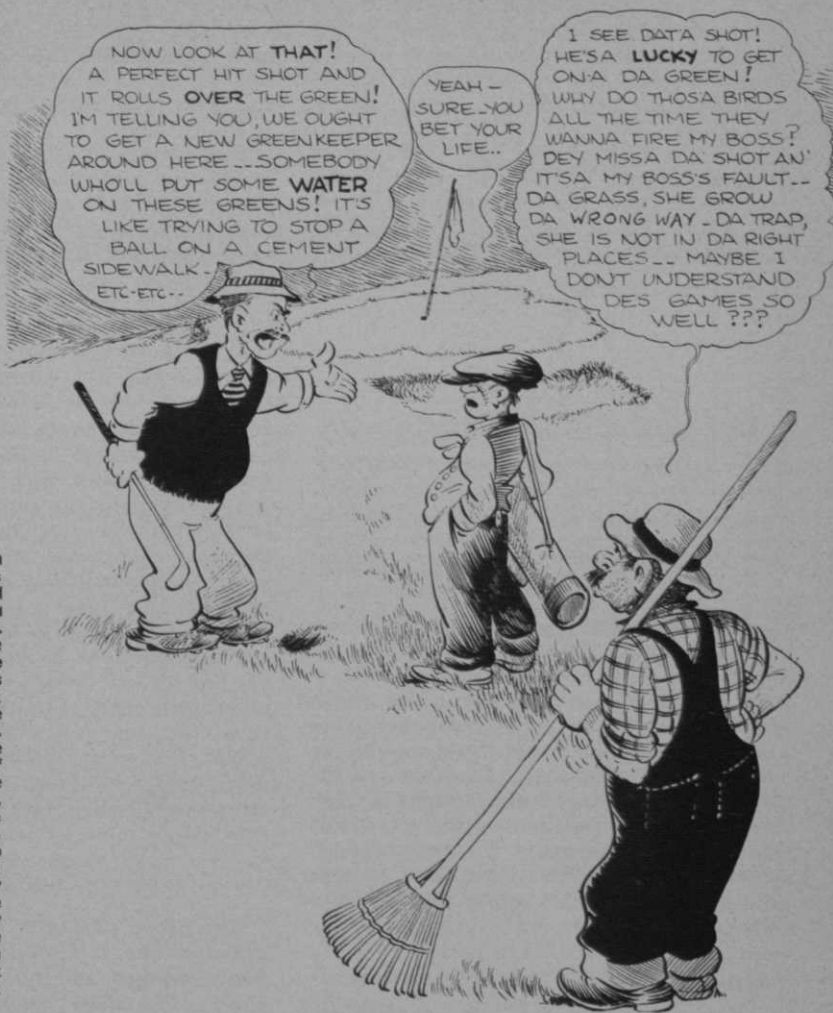
Greens in hollows are most often in broken rolling land where there will nearly always be accompanying natural depressions fit for grass traps with but little work.

I am not wholly esthetic in my dislike of sanded traps. I find from both experience and practice that a well-hit and well-placed trap shot to a sanded green will take peculiar gyrations after hitting the sand that is beyond my ability to explain or analyze.

To get on to the construction of the green. The base should be formed by

THERE ARE SEVERAL IN EVERY CLUB

If they put enough water on the greens for this bird you'd have to wade thru the mud on stilts. As a player, he couldn't hit the ground with his hat; instead of a golf course, he wants a set-up. Perhaps he'd be more content if they made traps he couldn't get into, cut down all the trees, made fairways out of all the rough, and installed runways to every cup. This would be something new which might prove popular, although rather dull. But it certainly wouldn't be golf!



NOW LOOK AT THAT!
A PERFECT HIT SHOT AND
IT ROLLS OVER THE GREEN!
I'M TELLING YOU, WE OUGHT
TO GET A NEW GREENKEEPER
AROUND HERE...SOMEBODY
WHOLL PUT SOME WATER
ON THESE GREENS! IT'S
LIKE TRYING TO STOP A
BALL ON A CEMENT
SIDEWALK--
ETC-ETC--

YEAH--
SURE YOU
BET YOUR
LIFE..

I SEE DATA SHOT!
HE'S A LUCKY TO GET
ON-A DA GREEN!
WHY DO THOSA BIRDS
ALL THE TIME THEY
WANNA FIRE MY BOSS?
DEY MISSA DA SHOT AN'
IT'SA MY BOSS'S FAULT--
DA GRASS, SHE GROW
DA WRONG WAY--DA TRAP,
SHE IS NOT IN DA RIGHT
PLACES-- MAYBE I
DONT UNDERSTAND
DES GAMES SO
WELL ???

the removal of the sod with a sodcutter from two to three inches in depth. This will leave a definite rim about the green's edge, definitely defining the green's boundary. If there is a roll in the green, which will in all cases exist if the sod be cut from the natural contour; and the roll be no more than 1 inch in three to five feet, any sand washed or blown to the edge of the green will not totally escape. In a hard rain, even though the sand washes to the edge of the green, the water can escape over the rim leaving the heavier sand in deposit. To finish this rim, sod may be sloped to the base; if the drop is quick enough the rim remains, yet leaves a definite boundary without allowing a poor shot through the green from hitting the rim and bouncing back.

After the base is formed and smoothed, the sand is applied. A sand green is not beautiful to any great degree, so we may dismiss the color of the sand used.

Many clubs have tried expensive processes of building a base to produce a cushioning effect by a layer of earth, a layer of straw, earth, straw, etc.; but the result does not justify the expense. The cushioned effect must be produced in the sand.

A graded river-washed sand should be used—one free from gravel, pebbles, and foreign substances. The sand should be applied *dry* and leveled to from $\frac{3}{4}$ " to $\frac{7}{8}$ " over the base. This may be done with a minimum of work with a drag made of a 4x4 about five feet long. The handle should be placed through the back center so that both the top and bottom

of the drag may be used. The 4x4 should be completely covered with sheet tin to prevent chipping and splintering through constant use, also to provide a smooth dragging surface. In the bottom should be placed sixteen-penny nails driven to the depth desired for the thickness of the sand—from $\frac{3}{4}$ " to $\frac{7}{8}$ ". They should be set in two rows staggered $1\frac{1}{2}$ " to 2" apart. This provides a rake sufficiently heavy to prevent bending and a

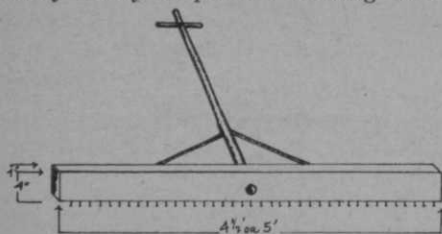


Diagram of drag for effective use on sand greens. Staggered effect of nails, although not shown by diagram, prevents collection of any particles that might cause uneven distribution.

gauge for sand depth. The staggering effect prevents collection of any particles that may cause uneven distribution of the sand. The handle should be placed in the drag at an angle to prevent piling of the sand before the drag and to accentuate distribution. The use of the 4x4 will provide enough weight to prevent the drag riding over the top of the sand. After the green is constructed the drag will serve for a long time to come to keep the greens smoothed in maintenance.

Never Oil Before Application

After the sand has been applied and equally distributed it should be oiled—never before application. Sand mixed with oil before application has an equal consistency throughout and eventually binds the sand to the base from heat and pressure. But if the oil is applied after distribution of the sand, whether the green be raked or smoothed, a pitch shot will force the oiled sand away and tear into the less oily sand above the base; this deadens the shot. A run shot will travel over the oiled portion without being affected by the underlying dry sand.

Many kinds of oils are used in the maintenance of greens. Paraffined oil ordinarily used as a base for furniture oils and floor sweeping compounds is probably the best, in that it is exceptionally clear and clean; but rather ex-

pensive. Crank case drainings may be used and the dirty residue may be removed, to a great extent, by filtration. The oil may be spread with a garden sprinkler and works best if spread on a windy day.

The amount of oil to be used is beyond description or formula. Experience will disclose the need or excess of oil by the feel of the sand to the hands. As the sand dries out it takes on a deadening and lifeless feel; the more it dries out the more it slows and deadens a shot. An excess of oil will cause layers of sand to form and destroy the cushioning effect of the dry bottom sand.

Clubs usually make a practice of oiling twice and sometimes three times a year—excessively each time. It is much better to oil lightly once a month for, as the greens are continuously stirred and leveled with the combined rake and drag, there is a turnover of the sand, which makes it impossible to keep the oil-soaked sand on the top.

The easiest way to keep the sand level on the green is to use the rake part of the drag. Drag it with a square crosshatch effect starting six to eight feet from the cup and dragging through to about the same distance on the other side; then cross and continue this procedure until the edge of the green is reached.

Removable Cup Most Adaptable

The most adaptable cup for the sand green is the removable cup. There are many designs and no particular preference. The most common type has an oversized galvanized sheet-iron sleeve inserted in the hole deeper by six inches or more than the bottom of the cup. The cup is made to fit snugly but not too snugly, as this causes sticking of loose particles of sand between the cup and the retainer. There is no particular advantage to the removable cup over the solid sleeve unless the playing members of the club have the courtesy to empty the accumulated sand each time the green is used; for if the cups are not emptied each time it sooner or later falls the lot of a following golfer to dig the sand out with his hand so that the pin retainer may be grasped to pull the cup out of the sleeve. This is much more difficult and bothersome than the removal of sand from a solid cup with the hands or a club.

FOREMEN OR SUPERINTENDENTS?

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Jack Gormley, pro at Wolferts Roost CC, Albany, N. Y., reviews the past and forecasts the future of the greenkeeping profession

AN EXPERT is one who makes things look easy because he has perfected a plan by which he can accomplish much with minimum effort. He uses his gray matter to save himself physical exertion. He does not reach this stage without thinking and planning and plenty of hard work. He finds out that the right way is the easiest way, and because it is so easy, very few find it. The expert has done his hardest work when he has found the easiest way.

A man who is a recognized authority on any one subject or in any specific job, is the man whose ideas are in popular demand by those who are in need of his services or by those associated with him in the same line of endeavor. He holds a position of prestige and influence that is not accorded those of us who have not reached the point where "Recognition" for our efforts should be our reward. A recognized authority is not only respected, but due to the fact that he has "risen from the ranks," he has gained a fair portion of financial success. This is what all greenkeepers have been striving for, "Recognition." Recognition of their chosen vocation as a *profession*, and adequate remuneration for the type of service they render.

Progress Has Not Been Too Satisfactory

We ask ourselves the question, "how far have greenkeepers progressed in attaining this aim?" and we answer reluctantly, "not very far." We ask ourselves the reason why, and we find it not too easy to answer.

A friend to whom I was speaking several weeks ago, told me a story that illustrates the professional status of a greenkeeper as compared with other professions. His name is Bob Scott, greenkeeper at the Baltimore Country Club. Bob has a son who is just over fifteen years of age, and who has advanced in his schooling to the point where serious consideration of his vocation should be determined. He pondered the future and what it held for him. At the suggestion

of his mother, to whom he turned for advice as to what he might make his life's work, he went to the government library in Washington, and borrowed a book which listed 45,000 jobs in the United States of America. He brought the book home and studied it industriously, and as future events proved, he derived from it a wealth of information.

Not Listed Among 45,000

That evening, when Bob came home from work, the boy immediately started popping questions at him. "What is a greenkeeper, Daddy?" "How much salary does a greenkeeper get?" "What does a greenkeeper do?" "Is greenkeeping a job?" The boy was confused and he evidently wanted an answer. Bob was surprised and asked him his reason for the sudden thirst for knowledge regarding greenkeeping. The youngster proceeded to explain that in the book listing so many thousands of jobs of all descriptions, that under the heading of "Golf Course Positions" he found that a golf course architect received from \$500.00 to \$5,000 for laying out a golf course. Caddie-masters were listed as receiving \$25 to \$40 per week. Laborers at 40 to 60 cents per hour. Caddies were paid 75 cents to a dollar per round and professionals received as high as \$5,000 per season. Greenkeepers??—Well, there wasn't any listing of that job at all. "Your job can't amount to much Daddy," he said.

When Bob looked at the book and found out how true were the words of his son, he realized as we all do, *how little* the greenkeeper is mentioned when credit is being passed out. Very little thought has been given to how much depends on this forgotten man of golf, when you find that in a book listing over 45,000 jobs that

"greenkeeper" is not even listed. It is further deplorable to note that the word "greenkeeper" has also been omitted from most dictionaries.

Greenkeeper More Than Just Laborer

We have often wondered why the greenkeeper has not been considered a leader—an authority—an expert. We have often wondered if golfers stop and realize, as they play over the course, that the man responsible for their golfing playground is given less thought, and greater condemnation than a grade-C caddie. Of course they don't. If they did, they would know that they are not qualified to be judges of golf course maintenance. We have wondered what we could do to change the general impression that the greenkeeper was just another laborer on the course. Up to the present time, we have done very little about it, except wish. We seem to have resigned ourselves to apparent facts, and consoled ourselves with the thought that, perhaps, some day our wish may come true, and that recognition would eventually be ours.

There's a whole lot in wishing; providing we work as hard as we wish.

Wishing perhaps is akin to faith. Wishing or faith is absolutely in vain, unless we work like the devil.

We have all wondered why the greenkeeper has been left in the cold—why he has been a forgotten man. Of all the people who have contributed to the well-being of the old Scottish game, the last to receive a word of praise or a word of commendation for work well done, is the greenkeeper. The professional receives acclaim because he plays the most difficult courses under par. He is recognized for his performances and made into a demi-god. He is feted and his praises are sung. But—it never occurs to anyone that one of the logical reasons for his par shattering success, is a direct result of the greenkeeper's unending search for ways and means to make the fairways and greens smoother, truer, and easier to play.

There is no comparison between the condition of golf courses today and those of fifteen or twenty years ago. Nor is there any comparison between the scores of yesterday and those of to-day. The suggestions of greenkeepers are responsible for the improvement of golf course machinery. The suggestions of greenkeepers are responsible for turf research work.

It is the experience of greenkeepers in conjunction with turf research organizations that have made it possible for the playing professional to play sub-par golf. But this is not generally known, because the greenkeepers' accomplishments have not been exploited. The good he has done lies buried beneath the compost pile. And why? Is there any real reason why he should not reap the benefits of the fact that he has been a major contributing factor to the long strides the game of golf has taken in the last decade or two? Our answer is "No." How are we going to receive this recognition? The following answer to this question is my own opinion and is perhaps, debatable.

Criticism from Experts Welcome

The approach to the requirements of any job in the greenkeeping profession must be analysis. In that analysis, the very first thing we should know is ourselves—our limitations, our capacities, our strength or weakness, our knowledge of our ability to do our jobs well. We must add to our moral strength and eliminate weakness by inviting with appreciative welcome all constructive criticism from our associates or those qualified to make such criticism. There are colleges with short courses in greenkeeping, experimental stations financed by federal and state funds and men like Dickinson, Noer, Monteth, and many others who have spent most of their lives in turf work. They are certainly deserving of being mentioned as those qualified. We must know our objective and our plans for realizing the fond hopes of every greenkeeper's ambition, which is success in our chosen field of endeavor. In this connection, we must realize that we are seeking permanent success.

In order to be successful, we must be leaders, and we must know that a leader is one who really leads, rather than one who drives. We must know that in order to be a leader, we must always keep ahead of the procession. That we must study in order to grow. It is wise to remember the saying, "if I rest, I rust." We must know the needs of our clubs' members and try to please them. We must learn how to get cooperation from them, from the green-committee, and from the men we employ on the course. We must know how to organize, how to choose assistants, and how and when to place responsibility. We must understand our men, their am-

SIXTEENTH AT CYPRESS POINT



Of all courses in the United States, few exceed the links of Cypress Point at Del Monte, Calif., in picturesque architecture or exacting shot requirements. This sixteenth hole is typical of the problems that face the golfer almost constantly.

bitions, their objectives, their faults and virtues, their families, and the things that will inspire them to do their best for our interests, as well as their own. We must develop them with a capacity for initiative, self-reliance and self-direction so that they will work with the least cost of supervision. We should develop them to the point where they will be capable of answering the knock of opportunity when it presents itself. We must realize that a good greenkeeper cannot succeed except as his men succeed. The majority of men are satisfied to follow, rather than to lead, and I firmly believe that more is to be gained for the cause of *individual* recognition of the greenkeeper if we handle men as human beings, rather than as a mass machine. We must know how to have a sympathetic understanding of all their problems and how to reward and compensate them for work well done.

At the same time, it is wise to know that, for our club's sake as well as our own, it is only kindness to get them to

seek other work, if by their actions they have demonstrated that they are not fitted to perform their duties satisfactorily. We all make mistakes in judgment, and the only proper thing to do for all concerned, is to correct them as soon as possible.

Watch for Unhappy Workers

Necessity once forced a greenkeeper who was doing some construction work to resort to the old-fashioned method of using wheelbarrows, to haul soil from one side of a green to the other. He had six men working. He noticed that one of the men always pulled his wheelbarrow behind him, while the other five men pushed theirs forward and seemed to accomplish a good deal more than this particular individual. So he asked him why he did not push like the others. The fellow looked up surlily and said, "I'm damned sick of the sight of it." That is an example of a mistake to be corrected.

A man who is not satisfied with his work is a detriment to its progress. As our men succeed, so will we.

Another point we should consider, and one of the most important is: when it is better for us to say "No," rather than "Yes," to suggestions that become an absolute obsession to the chairman of the green-committee. If these suggestions are contrary to the best interests of the club, and its members, and we are absolutely sure that we are right, our answer should be "No." If a boss will not listen to an intelligent "No," based on knowledge and careful thought, such a boss is not worth working for, and the job that we have, cannot hold much future for us. If saying "No" gets us fired, we are better off out of the job.

Being "No-man" Is Ability Test

Knowledge is the most component part of success, but it is not enough merely to have knowledge. Even if we are capable of the best construction and maintenance of golf courses, the world is not going to beat a path to our door to engage our services. We've got to tell the world that our work is the best. If we have the ability we can't wait for the people to discover it. We must let them know that we are capable and we must prove it. Being a "Yes-man" will never call attention to our abilities; but being a "No-man" will do the trick. Saying "No" to the chairman of the green-committee takes real courage, but it is often worth the risk and it is a real forerunner to being recognized as an expert, and when we have been so recognized, then can we say that "WISHES" that are horses will have been ridden to the individual success.

But individual success is not enough. Because one individual is recognized as an expert does not mean that 4,000 other greenkeepers have been so honored. We must go further. We must endeavor to perpetuate greenkeeping as a profession by taking advantage of all opportunities and by realizing that opportunity does not knock only once, but many times.

Chief among the opportunities offered a greenkeeper is the opportunity for recognition thru organized cooperation. Those of us who belong to greenkeeper organizations know how much good we have derived from our meetings. We know that collaboration has helped us become an asset in the operation of golf

clubs. We also know that before we had this method of distributing maintenance knowledge, that the greenkeeper was considered a much inferior figure than he is today in the eyes of nearly all who were connected with the game of golf. This opinion is gradually changing and is directly due to organization. Proof of this is seen in the interest green-chairman and other club executives are showing in the programs being sponsored by our greenkeeper groups.

In the November 1930 issue of GOLFDOM, an item appeared that is a little amusing to one who reads it today. It was titled "In Golf Club Circles," and reads as follows:

"A man who can supervise the routine work of a golf course is rated as a FOREMAN by those in authority.

"A foreman who knows the theory and practice of fine turf management, is a GREENKEEPER.

"A greenkeeper who can decisively demonstrate on paper what it will cost to maintain the course for the coming year, is a GOLF COURSE SUPERINTENDENT.

"At present there is a surplus of foremen, an adequate supply of greenkeepers, and a decided shortage of superintendents."

It would seem that in 1930 that writer in GOLFDOM did not think highly of a greenkeeper's ability. The item continues:

"Foremen are just four and one-half inches ahead of the sheriff; Greenkeepers have turkey for Thanksgiving, while Superintendents are worrying about their investments."

This item was boxed to lend emphasis to the considered fact that the "Foreman," the "Greenkeeper," and the "Golf Course Superintendent" were three separate and distinct individuals. I don't suppose Herb Graffis ever expected anyone to pop out and dig up the past, but there it is.

No More Foremen

Now, I am of the firm opinion that all of this might have been true in 1930, but that was over six years ago. Today, thru the efforts of greenkeeper organizations and the holding of monthly meetings, the foreman has dropped out of the picture. He has either been educated into a good greenkeeper or a golf course superintendent thru this organized cooperation, or else the sheriff has caught up