

paid as it went along. The club has a big directorate—fifteen—and an official personnel experienced in golf club affairs. The directors meet as often as 21 times a year. It is 18 years old and close-in. A sinking fund, formerly \$2.00 per month per member, is now raised to \$4.00. In July, 1931, the club had all its property, including a swimming pool, paid for, no bank obligations, and kept on discounting its bills. It bought ground for a new clubhouse at the end of 1931 and during the past 6 months has retired \$10,000 of that ground's purchase price.

Because Mission Hills is in sound physical and financial shape, the loss of members by removal, death and depression is fairly well balanced by new members who want to join a strong club.

Olympia Fields C. C. (Chicago district) has been doing a husky job of retiring its obligations this year, and a recent circular letter sent out by President William Wise detailing this reduction of indebtedness shows vividly how smart operation and close watch of expenses can put clubs in good shape without depreciating the plant. Payroll reductions at this mammoth club have amounted to better than 30 per cent this season as compared with last.

One item standing out in reports from clubs in various parts is that many records for golf play and entertainment attendance have been broken this year. Livelier programs at the clubs and bargains in entertainment have brought folks to the clubs, probably at the expense of road-houses. Some of the gold coast clubs report unusually heavy play because members who formerly left town on vacations are staying home this summer.

Generally epitomizing the situation, it is plain that the fears of the bottom dropping out of golf this year, which were strong in some quarters this spring, have not been warranted. Estimates from private, daily-fee and public courses indicate that play is off possibly less than 10% from 1931, but a lot more people are using the ball washers at the first tee than ever did before. At that, pro shop sales of balls and clubs are better than the average retailing picture. A drop of 25 per cent under last year's total dollar volume of pro shop business looks to be a good guess after talking to manufacturers and pros. This isn't at all bad when the sharp reduction in retail prices of golf goods is considered.

Two things stand out in the present situation, both of which GOLFDOM has been pounding for a couple of years. One is that special rates and special attention given to development of women's play is creating big interest and business in the golf field. The other thing is that the clubs with accounting systems that really tell the score promptly and fully have weathered the storm in grand condition.

New Tree Culture Manual is Valuable to Greensmen

"Insects and Diseases of Ornamental Trees and Shrubs." By E. P. Felt & W. H. Rankin. 507 pages, profusely illustrated. Rural Science Series, The MacMillan Co., New York City. \$5.00.

IN VIEW OF THE increased emphasis being placed today upon preservation of golf course trees by golf club members, the latest addition to the MacMillan Co.'s "Rural Science Series," entitled *Insects and Diseases of Ornamental Trees and Shrubs*, by Ephriam Porter Felt, director and chief entomologist of the Bartlett Tree Research laboratories, and W. Howard Rankin, research associate in plant pathology at N. Y. State agricultural experiment station, is a volume which should be on hand for study and reference by green-chairman and greenkeeper of every golf club.

The book is divided in two parts, the first section dealing in a general way with injuries due to insects and fungi and the latest accepted means of eradicating damage, with particular emphasis on the advantages of annual preventive measures in forestalling the depredations almost sure to occur if trees are neglected.

In the second half of the book, trees and shrubs are alphabetically arranged, with detailed descriptions of the particular diseases to which each tree or shrub is subject and complete directions for identifying the source of the trouble and remedying it. Over 250 photographs and diagrams are included.

Golf clubs of the U. S. spend thousands of dollars annually protecting the trees which beautify and improve their properties. A volume as authoritative, up-to-date and useful as this belongs in the club library where it is quickly available for reference.

How False Economy Steals Maintenance Money

By T. H. RIGGS-MILLER

A WAVE OF economy has swept golf clubs and has taken a strangle hold on some budgets. There are clubs running courses on half of last year's budget, and at least one has a tentative budget of only one-third of its last year's. Most of these drastic reductions are caused by threat of dwindled memberships which has not materialized to the serious degree widely expected at the start of this season. In order to combat the loss of income, exclusive clubs have thrown open their doors to paying guests, even on Saturdays and Sundays. Salaries and wages, caddie fees and food have all felt the axe.

Public courses, including the municipally owned, have not escaped the heavy foot of hard times. Their best patrons are availing themselves of the private club's inducements to play for green-fees very little more than charged by daily-fee courses.

In talking to the green-chairman of one of the best known and popular clubs on Long Island, whose annual expenditures heretofore were around the \$40,000 mark, I was informed that "the club could only spend \$12,000 this year; no fertilization,

limited irrigation, less wages, less men. Where we will be at the end of two years I don't know, but this is the absolute limit of available funds." This course fortunately has a brainy greenkeeper who will stretch this \$12,000 until it feels half as big again.

Room for Economy.

There happens to be another course adjacent to this one, which is almost perfection itself. On account of its wonderful condition the membership is full, no decrease in patronage has been felt, other than in the restaurant. This club is one of the \$45,000 upkeep class, and with the exception of an all round cut in wages, representing a saving of perhaps \$5,000 to \$6,000, nothing has been done. They have 15 men, all the fertilizer, irrigation and seed the greenkeeper desires. The greenkeeper at this course is conservative, conscientious and painstaking,—one of the old school, so to speak. His course reflects the good things it has to eat and drink, and the numerous hands that attend its wants. The greenkeeper, strange to say, has a horror of the machine age, and outside of the fairway mower tractors, will not consider any other motorized unit. The



Before:

The bridge over this trap, although artistic, did not overcome expensive hand mowing of the banks. By using the fill from the outside bank and grading it, a rolling result was obtained

thought of cutting his greens with a power-mower is nothing less than sacrilegious. Even an acre and a half of lawn around the club-house which has taken four men, 3 to 4 hours several times a week for the last 7 or 8 years, is still mowed by the conservative hand-machine method.

There is a difference of opinion on the practicability of power green mowers, but all must admit that it is no longer economical to cut large areas of turf, such as lawns, tees and approaches, by hand when any one of a number of power mowers on the market can mow the same area in a fraction of the time and cost. I am not an advocate of less man power on a golf course, because the keeping of 120 to 150 acres of grass land, plus the refinements that have been demanded by golfers during the past 5 years, with a limited gang of men, is a far greater task than is generally supposed. And in justice to the vast majority of greenkeepers, it is astonishing to visit golf course after golf course and see the wonderful results obtained by them, with limited budgets, equipment and men at their disposal.

There are so many phases and shades of economy that these greenkeepers are forced to practice in the maintenance of their golf courses, that it is hard to lay down any specific rules which will cover all of them. It will be understood, however, that any reference to economy must necessarily apply to metropolitan courses, which have, or have had, large memberships, and not to golf courses in small towns, described in GOLFDOM from time to time, which are maintained by three men and the dog for a dime a day.

The determining factors in the cost of maintenance are fundamental. The one that will be referred to here is little understood by green-chairmen or even professionals, and is totally ignored by playing members. For the same reason also, maintenance costs on different courses can never be uniform. This fundamental factor, which as will be seen plays havoc with maintenance costs, is the manner in which the mounds and banks of greens, tees, etc., were finished off during construction.

Construction Governs Costs.

In order to make the point clear, let us first examine the major item of labor cost in the maintenance of a golf course, i.e., grass cutting. This includes the cutting of greens, tees, fairway, rough, banks of greens, bunkers and mounds as well as lawns, practice putting greens, etc. It will be conceded that if less labor and time are consumed in performing this task, that the cost will be less. Therefore, it can easily be seen that if a course is built on level or gently rolling ground that the cost of mowing is not as great as on a course built on very hilly ground, where the greenkeeper is forced to use horses and in some cases cut whole hillsides with hand machines or scythes. These are but physical differences in the terrain, which show that the cost of cutting a given area is in direct proportion to the amount that can be cut by tractor mowers. In other words, the more of a golf course that can be cut by a tractor mower, the less the cost will be,—and the reverse—the more hand mowing that is done, the greater the cost.

After:

Bank can now be cut by a tractor mower. Alteration of the back of this green, together with two other traps of same size, cutting and laying of sod complete, cost less than \$200

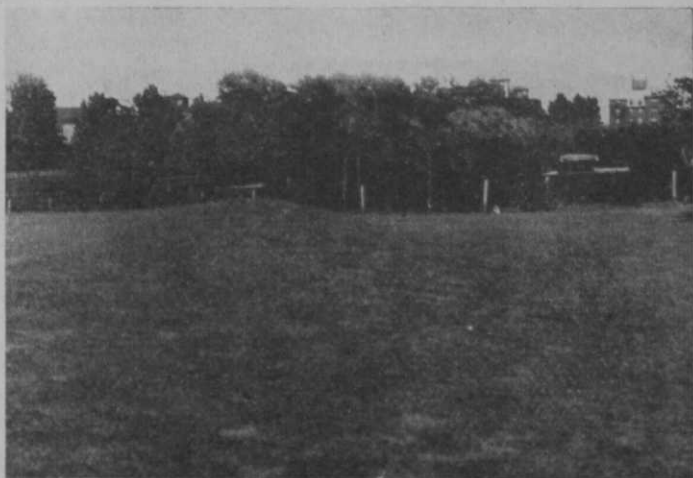


TABLE SHOWING COMPARATIVE COST OF HAND MOWING VS. POWER MOWING

Course Number	Year Built	Cost of Hand Mowing Banks and Mounds, per Season	Est. Cost of Grading Banks and Mounds During Constr.	Est. Cost of Grading Banks and Mounds Now	Gross Cost of Cutting Banks & Mounds by Hand Since Constr.	Est. Cost of Cutting Same Area for Same Period by Tractor Mower	Actual Cost to Club Since Course Was Built
1	1921	\$2,000	\$2,000	\$3,500	\$22,000 (11 years)	\$3,300	\$18,700
2	1923	1,700	1,500	2,600	15,300 (9 years)	2,295	13,005
3	1924	2,700	4,500	6,500	21,600 (8 years)	3,240	18,360
4	1927	1,200	1,000	1,800	5,800 (5 years)	870	4,930
5	1929	1,900	1,500	2,500	5,700 (3 years)	855	4,845
6	1929	2,700	3,000	4,000	8,100 (3 years)	1,215	6,885

It seems reasonable to suppose then, that during the construction of a golf course all the grading would be done in a way that would enable a tractor mower to cut the maximum possible area, even to include tees, and reduce to a minimum any hand mowing. Strange to say, the fundamental error of constructing straight sided banks on greens, tees and bunkers, that have to be cut all by hand, is the rule rather than the exception. The common causes for this costly mistake can be ascribed to ignorance on the part of the constructor, lack of supervision by the architect, lack of interest in subsequent maintenance or a desire to finish the work as cheaply as possible. Considerable extra fill is required in order to give the proper slope to banks, mounds, etc., more especially when the height of the bank exceeds 4 feet. How dearly members of golf courses pay for this omission can only be realized from a study of figures gathered by a number of interested greenkeepers who have inherited this type of course, is shown in the accompanying table.

Maintenance Costs High.

In the matter of mowing banks by hand, we find that in half the cases quoted, the yearly maintenance costs exceed the construction costs. Even if they were done now, it would still pay for itself in from 18 months to 3 years. The outstanding surprise of the analysis is the cost of hand mowing large areas over a period of years. In the case of Course No. 1, a net saving of \$18,700 could have been made in 11 years. If this sum were in the club's treasury now, it would certainly be welcome.

It seems that most clubs get off on the wrong foot. How much inexperienced construction men, in spite of all precautions, have cost experimenting with the club's money, only the original construction com-

mittee knows. The first thing that this committee finds out, is that the estimate is ruinously wrong. I have seen an estimate of \$90,000 accepted by a construction committee, from an architect that did not consider a topographical map and soil survey necessary. When the construction was nearly complete, it was found that a topographical map had to be made, in order to formulate a drainage scheme, made necessary by the tenacious clay soil, which a soil survey would have disclosed in the first place. Tree removal, irrigation, erosion control were all underestimated, to the extent of \$60,000, thus making the actual cost \$150,000. Even when this amount was spent, the course could not be rated as first-class.

Another bugaboo for the construction committee is that when the grass does not germinate as well as expected, advice is sought from various "grass-uplifters," whose business is to tell "how to grow bigger and better grass." They lull the committee into "kicklessness" by assuring them that it takes three to five years to produce turf.*

Assuming that a golf course has started construction; after a period ranging from 6 months to 2 years, the committee at last is told the course is finished. But spending the members' money is not finished. To their astonishment sand for bunkers, maintenance equipment and other essentials were not included in the estimate at all, much less suitable service buildings to house the equipment, fertilizer, seed, compost, etc. One of the successful moulders of golf courses,—a man who has built a great number of well finished courses and who knows costs backwards, having spent over \$2,000,000 of somebody else's money during the last 20 years, insists that

*See article by Riggs Miller in August 1931 "Golfdom."

golf club officials like to be fooled, and said to me, "In order to get a job I dare not give the true cost, because I have lost too many good jobs by doing so."

Need Veterans for Pro-Greenkeeping.

No less than 6 of the well-known metropolitan golf clubs have sought economy by dispensing with their greenkeepers and placing the pro in charge. How well this experiment will work out I don't know, but it is interesting to hear what a very prominent Eastern pro has to say. To use his own words; "How long does it take the average professional to learn to play golf well enough to teach it? Not in three months, or by taking short courses of a week at a time, or a lifetime watching another play. It can be done only by years of practice and experience. Very few pros are fitted by training to be pro-greenkeepers. If a pro is really on the job, he can find enough to do in his own bailiwick without looking for troubles outside. Besides, when a course needs him most, he is too busy teaching, playing or looking after his own business, to give it the personal attention it requires. He therefore is forced to depend on his foreman to cope with the situation."

As in the building of a golf course, it takes years of time and has cost clubs thousands and thousands of dollars for experiments and mistakes the greenkeepers have made, before arriving at their present state of efficiency. Dame Experience, greenkeepers know, has led them into many a pitfall before her rigorous lessons have been learned. The tuition fee has been heavy on the clubs, and it is hard to realize that there are clubs willing to go through all this again, which must be done before anyone can master the art of greenkeeping. When the pro follows the thorny path, then the club risks paying again. Professor Dickinson, of the Massachusetts State College remarked that "the knowledge necessary to a good greenkeeper equals an average college course"; so, if the pro must depend upon his foreman to see him through, the club is still the loser by paying too dearly for inferior supervision.

The paramount question is, then: Can real economy be effected without detriment to the golf course?

Real economy must be fundamental. Such things as neglecting to cut a rough, failing to fertilize (when an 18-hole course can buy a season's fertilizer for less than

\$400), not watering sufficiently, not using tee towels, not raking bunkers, or (like one green-chairman I know) spending \$4.00 in phone calls to save a cent a pound on 200 pounds of grass seed, are as foolish as they are unsound.

A golf course is built for the pleasure of its members. By omitting any or all of the ordinary refinements, punishment is substituted for pleasure: for instance, cuppy lies on the fairway caused by lack of fertilizer. Through want of food the grass has lost the recuperative ability to spread itself and cover these spots. No greater displeasure awaits the golfer than to find himself in high rough after having played an otherwise nice shot. Equally disconcerting are deep footprints in bunkers. Therefore, in any economic program all these things must be included, but be done in a quicker and less costly way.

Spend to Save.

It might sound paradoxical, but nevertheless it is a fact, that in order to save, one must spend. This truth is more potential when applied to labor-saving devices on a golf course. This fact was brought home to me very forcibly the other day when visiting a brother greenkeeper, who took charge of a course this spring. Last year the maintenance cost \$12,500. The first thing he did on taking the course over, was to ask for and get \$1,500 worth of new equipment and \$500 worth of fertilizer, seed and fungicides, etc. He has remodeled 4 holes in their entirety; has built 4 new tees on other holes, and his program calls for 4 more tees, which total 12 new ones. Notwithstanding these expenditures he will finish the year, by spending less than \$11,000, \$1,500 less than pure maintenance cost last year. I consider it a fine showing to absorb the cost of machinery and fertilizer in one year. But when, besides this, he maintains the course in first-class condition, transforms 4 mediocre holes into 4 fine golf holes that would grace any course in the country, and builds 8 extra tees, not one of which is less than 3,000 sq. ft. (50 ft. by 60 ft.), the performance is remarkable.

By coordinating the present decline in the cost of labor, supplies, etc., the added efficiency of power equipment, more especially where greens are cut by power-mowers, and by increasing the area to be cut by tractor mowers, surprising results can be accomplished by the greenkeeper in the way of low costs, without sacrificing the essentials.

"Back to the Player" Is Keynote of PGA Education

By ALEX PIRIE

FAVORABLE comment on the educational plan of the PGA as one of its phases is being tested in the New York and New Jersey metropolitan districts shows that this plan, inaugurated by President Charles Hall, is worthy of energetic development.

It seems to me that the phase of the educational program now active is a sound one, not that I entertain glowing notions as to the ultimate success of the "back to the bench" movement but because superior knowledge of proper design and construction of clubs is an essential in fitting the right clubs to the players. I have my doubts that there are as many as 200 competent bench clubmakers in the country. We cannot expect much in the revival and extension of bench clubmaking artistry from our young men who now are designated assistants instead of apprentices at this time, when the far greater part of clubs are factory-made and this situation according to all judicial evidence promises to continue; possibly to extend.

Back to Player—Not Bench

Nevertheless, a pro lacking a thorough command of club design and making is not competent to serve his members correctly. What valuable knowledge is being acquired by some of the younger eastern pros as a result of the PGA travelling instructor's efforts is, to my way of thinking, better classed as an important part of a "back to the player" campaign than as a basic detail of a "back to the bench" enterprise.

This expression is merely my personal opinion. Others may differ. But differences of opinion make horse races and matrimony; both of which are for "the improvement of the breed," and that's about the purpose of the PGA.

We made some great clubs on the bench in the old days. Considering the improvement in the ball and comparing the scores now and then we might not be able to understand fully why the bench business vanished. Part of the disappearance prob-

ably is for the same reason that nails are now made by machine instead of by hand—quicker production and greater uniformity. Another reason undoubtedly is that while we were maintaining our mastery of club making we were treating our strategic selling position too casually.

But after all, the average pro earning now is considerably higher than it was in the bench-made club days, so progress has been kind to us.

Pro Has Service to Sell

Studied promotion of a "back to the player" movement will be extremely timely. It will mean that we give more attention than ever before to the matter of instruction. It calls for shop operation on a strictly service station basis and that is the only right way for any of us to run a shop.

The playing public's idea of shop profits is something that pros wish were true, for we all know that with the modest guarantees given to most pros and the heavy expenses of shop operation, salaries, insurance, free repairs, replacements and other items, our margin narrows down to the vanishing point.

Nevertheless, the pro's shop and lesson tee are his business headquarters and if we are in the slightest manner deficient in maintaining our department at the highest standard we are taking costly risks in these times.

Shop Is Key Spot

Regardless of what objections might be voiced against pro emphasis of the shop we must educate ourselves to see that our shops are conducted on the highest plane of merchandising because the shop is where we merchandise the most important thing we have to sell—our own services. Even the selling of our lessons is done in the shop most often. We all know that despite the general public's error in wildly over-estimating our shop profits, it is from the shop that a good part of our living income must be secured. Consequently there

must be an important place for merchandising education in any of the PGA educational plans.

There is another timely angle to this matter of shop education. Every phase of retailing, in its present form, is in a battle for survival. From an authoritative source I learn that retailing generally in this country is off from 50% to 60% from 1930. As near as can be estimated from several manufacturers and sectional PGA officials, pro-shop cash volume of sales at the most is not 30% under 1930 figure, notwithstanding drastic price reductions. This means one or both of two things: (a) our strategic location protects us against the bottom dropping out, or (b) we are improving as merchants and haven't the handicap of previous over-selling to keep us from doing a fair amount of business.

Now, with the other retail outlets unable to afford the continuance of departments in which there is a heavy loss and the golf goods volume other than pro shop business being divided among many fields of retailing, the stage is all set for us to make most emphatic our commanding position in golf goods retailing.

By realizing this opportunity and educating ourselves to take advantage of it, the pros will come out of the present general slump in better position than they ever were before.

In view of the above outlined conditions it seems plain to me that it is strictly up to us to prepare ourselves for directing and commanding whatever developments may take place.

What About Greenkeeping?

To me, it appears further evident that our educational plans should seize upon merchandising rather than greenkeeping as its imminent objective. Not that I don't think a pro should know greenkeeping. I do. And I happen to know what a tedious, complex and exacting matter greenkeeping is for I have been at it for years and like some of my able and prominent pro-greenkeeping friends, among them Alex Cunningham, Jack Mackie, Elmer Biggs, George Knox and Willie Ogg, for example, I consider greenkeeping with humility. But the idea that greenkeepers can be developed in a few short years is one that can lead the pros into grief. We individually can stand all greenkeeping knowledge we can get from the already established organizations for greenkeeping instruction, but as a definite factor of the

PGA educational plan I believe we can properly dismiss greenkeeping.

What many pros need in the way of greenkeeping knowledge is information that will help them to co-operate effectively with the greenkeepers at their clubs and utilize to the utmost the present scheme of club operation. Some of us may be inclined to think that the grass on the greenkeeping side of the fence is greener but viewed in the light of greenkeepers' average salaries and the serious responsibility they must personally accept for what may truly be acts of providence, the greenkeepers' lot is not one to be envied.

I certainly don't mean to infer that any pro should neglect his study of greenkeeping. Under prevailing financial conditions at some clubs a pro-greenkeeper position is imperative. But if a club can afford both pro and a competent greenkeeper there is every reason for it to maintain these positions unless it is fortunate enough to have a thoroughly experienced pro-greenkeeper on its staff. The number of these men is not many.

Our main educational job is to sell ourselves and our services on a basis of greater mutual profit to our clubs. Logically then the PGA educational plan is one that helps us all make the most of our chances as they present themselves right now.

Each section of the PGA might well be giving careful thought to its local educational problems and give all possible co-operation and impetus to the national PGA educational plan as launched by President Hall.

Pro-Shop Robber on Prowl in Michigan

FRANK REFNER, pro at Hillsdale (Mich.) C. C. and one of a number of recent victims of Michigan pro-shop robberies, acquaints GOLFDOM with details of the theft at his shop. The robber knicked Frank for about \$509 worth of merchandise. He wants to warn other pros and asks their aid in apprehending a suspect. This suspect was about 5 ft. 5 in. in height; weight approximately 125 lbs. He came into Frank's shop and made a careful survey and although the theft was of high grade merchandise, Refner said when he got the suspect to register for a round and watched him tee off, it was obvious the man was the rawest of dubs.

Dubs' Howl for Soft Greens Haunts the Greenkeepers

By ARTHUR LANGTON

EARLY this year GOLFDOM picked a sentence out of an interview with Bob Jones on the new Augusta National course. Bob said those greens wouldn't be watered so that any kind of an indifferently played approach shot would stick. We commented that Bob had given the answer to a serious problem of greenkeeping, but an answer that most greenkeepers wouldn't be permitted to give. The duffers want soft greens that hold shots regardless of the turf maintenance difficulties involved.

Far-reaching was the effect of this comment. The Green Section prevailed on Bob to follow-up with an article on green texture with respect to shot making and maintenance. Golf papers in other countries have quoted freely.

It begins to look like greenkeepers may not be compelled to water excessively with risk of greens loss simply because of faulty construction or the players' inability to make the required shot.—Editor.

BOBBY JONES' recent article in a USGA bulletin noting that soft greens are conducive to neither good golf nor good turf, met with loud acclaim among members of the California greenkeeping clan. Keeping greens soaked with water so that they will hold any kind of a shot that hits them whether driven by the blade, heel, or shaft of a club has long been one of the greensman's more objectionable duties. He knows that he is doing his turf no good by keeping it in a soggy state, yet if a retired butcher lands a mid-iron shot on a green from a distance of 150 yards and the ball keeps right on going, the course superintendent will hear all about it.

There is not much, of course, which can be said in defense of hard greens, and yet of the two extremes soft greens are probably the most objectionable when every-

thing is taken into consideration. Hard greens are truer, being free from ball pits; the grass on them is sturdier and more resistant to disease; and they are a less expensive care. And there should be just as much acclaim due a player for executing a perfect pitch and run shot as for making a half-topped pitch shot which stops dead to the pin by the grace of a soggy green.

To most players there is only one reason why their so-called approach shots will not stick on a green, and that is that the green is hard. They fail to take into consideration the fact that their judgment of the level of the green may be at fault. For example, the sixth green of a famous Southern California course is the only one of the 18 which is built on an almost level plane. The remainder slope towards the fairway, materially aiding the holding quality of the approach shots. The result is that this green, which receives exactly the same treatment as all the rest, is eternally dammed as being too hard to delay the progress of a pitched ball.

Want Synthetic Greens.

The words of the great Bobby will cut none of California's cracked ice. The sun-kist players have had artificial golf courses for so long that they are beginning to want their game to be synthetic. Under natural conditions California courses would have little growth on them besides a few patches of Bermuda grass and chaparral. Grass is an expensive effort, consequently thick tangled hazards which characterize other courses are somewhat of a rarity in the Pacific Southwest. With this beginning the local golfers began to seek other methods of making their courses places upon which to score rather than places to test their golf. This may be the reason why the state which produces internationally famous athletes in other fields of sport, has turned out only a few really good international golfers.

The story is told of a California golfer who belonged to a course which had artificial embankments to prevent golf balls

rolling down steep canyons. This pampered sportsman visited a century-old Scottish course in his travels. Taking one look at the acres of gorse and bracken which abounded on every side, he made the statement that "they would have a pretty good course here some day when they got all this undergrowth cleared off the fairways."

Golfers, being basically human, are satisfied with none but the easiest path once they have fallen into its rut. He does not want to be educated; he wants soft greens. So, the greenkeeper has to provide them. Experience has demonstrated conclusively that the time to start preparing a green to hold an alleged pitch-shot is before a sod is turned in construction work, which is a policy rarely followed. This, in spite of the golf engineers who have long contended that once grass is grown on any kind of soil, the quality of the turf can be regulated from that time on by topdressing and irrigation. Possibly this can be done, but it savors too much of letting a youth run as he pleases among unwholesome companions for 20 years and then trying to make a gentleman out of him.

Prevent Packing.

If the soil upon which a green is to be built contains plenty of fibrous material to prevent it packing under pressure, then there is little likelihood of trouble developing in the way of hard surfaces. But such soils, particularly in California, are rare. Instead there seems to be a plethora of soils to grow greens which, though soaked in the morning, by afternoon will set to such a hardness that Jones himself could not keep a ball on one, except by the aid of a movie camera. This being true, it is obvious that the thing to do is to add loosening or fibrous material in proportion to the potential packedness of the soil. The cost of incorporating peat, sand, straw, charcoal, manure, lime, or any organic roughage within the bed of a prospective green is small compared with cost of injecting this same material after the turf has developed.

Another method of construction which has been found efficacious in holding poorly played shots somewhere in the vicinity of the pin is to place the 3 to 6 inches of topsoil on a four-inch layer of cinders or coarse sand. This practice, in addition to enabling the green to hold almost any kind of a pitch, provides excellent drainage and promotes the capillary action of

the soil. The chief drawback is that this method is expensive if done properly, because all the finishing work must be done by hand, horses and tractors being too heavy.

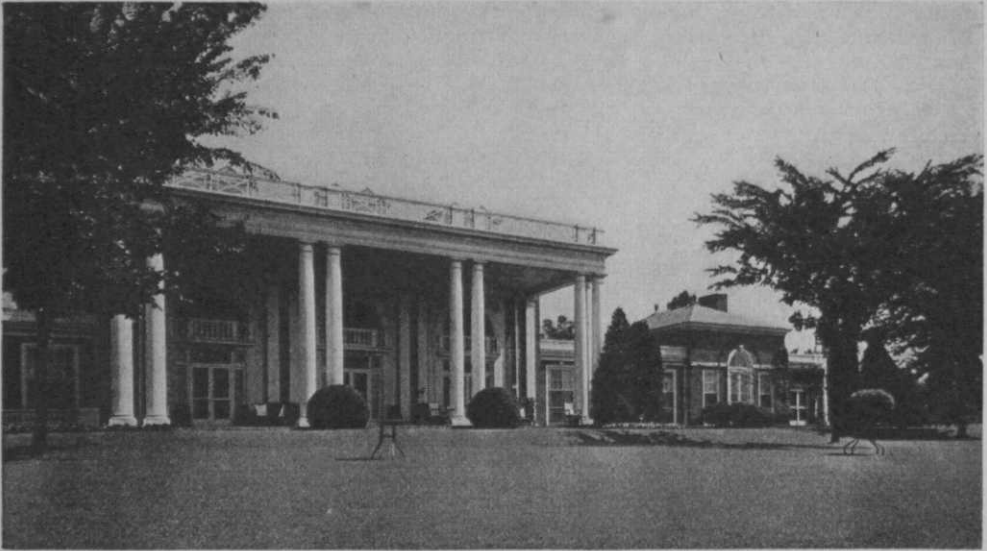
The advantages of incorporating pitch-holding qualities into a green during its construction are so manifest as to need no further exposition. Nevertheless, in the year before the millennium arrives greenkeepers still will be called upon by construction engineers to use their arts to stop all shots lucky enough to hit the green.

Greenkeepers Have Burden.

This leaves two alternatives: either golfers must be taught to play backspin shots correctly, or present greens must be treated to hold pitches regardless of how they are played. This being an article devoted to greenkeeping and not to the work of the professional, the latter course will be followed. In colder climes Mother Nature is of material assistance in this regard because her extremes of temperature serve to flocculate the soil by expanding and contracting the grains. But in the Pacific Southwest, where even rain is scarce, there is practically no physical change noticeable due to variations in temperature. In this region the soil gets packed and stays that way unless artificial aid is brought to the rescue.

Chemical means of softening the playing surface are in common usage and refer to the application of topdressings, usually containing lime in heavy quantities, to make the soil grains more granular. This disadvantage of the lime treatment is that this substance soon leaches away, and while it is available it promotes the growth of undesirable plants. In addition, bents do not seem to thrive on it as a constant diet.

A dressing of 60 per cent sand, 20 per cent loam, and 20 per cent organic matter, when used in conjunction with spiking is fairly effective in keeping the turf soft. Peat seems to be good if it can be applied properly; that is, if the green can be taken out of play for a period of time. Owing to the peculiarities of this earthy substance a great variety of opinion in regard to its use has sprung up on the Pacific Coast. If it is put on the green in too fine a form it defeats its own ends by packing. If it is applied coarsely, the individual lumps soak up water and swell at an alarming rate so that balls are deflected in their course. In addition, most



Country Club of Virginia's rich looking clubhouse where verdant acreage of bent from Murphy nurseries provides greens turf

of the dressing is picked up and thrown into the catcher the first time the treated green is moved. If the green could be closed to play to allow the peat to become incorporated in the soil, all would be well, but sadly enough the millennium is not yet. Many western greenkeepers dispense with this form of humus rather than take a chance on striking the hairbreadth happy medium.

By the practice of diligent topdressing a new growing surface can be applied to any green, but not such a one as popular fancy would conceive. An examination of greens in Southern California revealed the fact that though they are topdressed regularly throughout 12 months of the year, the average depth of material applied after the grass was grown did not exceed three inches. This may give some idea of the cost in time and money of deliberately trying to supply a new surface to an old green. To get an inch of topdressing applied in one year would mean that the putting surface would be in a perpetual state of repair, a condition which even the most rabid advocate of new and softer turf would not condone for long.

Like the stories in confession magazines, this is written only to serve as a warning and to present a great moral lesson: If players must have soft greens to rectify their playing faults, then let this pitch-holding quality be incorporated during construction and not as an afterthought.

Green Section Announces Summer Meeting Schedule

EVIDENCE OF how highly the work of the Green Section is rated by course superintendents and clubs shines out in the schedule of summer meeting dates recently announced by the Section. This year, due to shortage in the Green Section budget, it has been necessary for local groups to arrange financing of summer meetings instead of having the expenses of Green Section officials paid from Washington out of the USGA funds as was former practice.

Prolonged hot weather and the insect pest trouble following a couple of open winters has given the courses plenty of trouble to discuss and attempt to solve this season. Consequently the summer meetings have a definite cash value for clubs at this time particularly.

Summer meetings now booked:

- Aug. 1, 1 p. m.—Philadelphia (Pa.) C. C.
- Aug. 1, 4 p. m.—Pine Valley G. C., Clementon, N. J.
- Aug. 8, 2 p. m.—Allegheny C. C., Pittsburgh, Pa.
- Aug. 9, 4 p. m.—Municipal G. C., Niagara Falls, N. Y.
- Aug. 12—Royal York G. C., Toronto. (Meeting sponsored by Royal Canadian G. A.)
- Aug. 15, 4 p. m.—Century C. C., New York City.