A partial view of the No. 7 and No. 8 fairways at night. The No. 8 hole was selected for the trial hole installation. The hole is 478 yards long with plenty of rough. The ball is easier to locate at night than in day.

Night Golf on Full Length Course Makes Good Debut

To Eastwood Hills C. C., Kansas City, Mo., goes the distinction of holding the first nocturnal tournament on a full length golf course. The first foursome teed off at 8:30 p. m., August 6, and when the last quartette holed out at 1:30 the following morning "Jug" McSpadden, pro at Victory Hills, had registered with a 35-33-62 for the nation's first owl golf title. McSpadden played the nine illuminated holes of the Eastwood Hills established two under par the second time around. Fifteen foursomes competed and despite the fact that some of the field were wilder than professional prohibitionists there were very few lost balls.

Judging from the success of the Eastwood Hills installation and the interest being extensively shown in the night lighting of full length golf courses it is reasonable to forecast that 1931 will see a number of the fee courses illuminated. Figures on the miniature course play shows that approximately 60% of the income drops into the cash register after dark. Night baseball and football have now emerged from the experimental stage and by most indications seem to be financially successful.

Just how golf will be able to do depends on the location of the course and the rate. At Eastwood Hills, the installation cost

This night operation of a 3,100 nine-hole golf layout at Kansas City calls for more watching by daily fee course owners than any recent development. The early performance of the installation indicates a current bill for $20 per night for five-hour operation.

The Eastwood Hills plant now includes a picnic grounds so family golfing parties in the evening look to be a prospect for added profit to the course owners and a big developer of the playing equipment market.
was approximately $1,000 a hole. The operating costs are not known at present. The illuminating engineering work was done by John P. Wollard, manager of the Da-Lite Floodlight Co., and according to the figures compiled by Mr. Wollard and J. E. Turner, head of the Eastwood Hills organization, the four hour extension of play each day will yield a good profit on the investment. How they figure we don't know, but on the basis of a foursome every five minutes until 10:30 p.m. at 75 cents or a dollar the investment certainly stands a grand chance of amortizing itself and paying a profit during the first season's operation.

**Night Play Pleasant**

While night golf is new it should command a nice premium in the playing rate for nine holes. Many who have played on the Eastwood Hills course at night comment enthusiastically on the pleasant coolness of night play, a great attraction in Kansas City where the summers have scores of days that are hotter than Spanish honeymoons.

Accompanying illustrations of the Eastwood Hills course by day and by night show what an excellent job of illumination has been done.

Technical details of the installation as supplied by Mr. Wollard follow:

"The course is an extremely difficult one to illuminate, as the general lay of the ground is extremely rough; having many hills, valleys, ditches and trees throughout. It is conceded one of the sportiest courses in or near Kansas City, and there is probably no course more difficult to illuminate anywhere.

"The Da-Lite Floodlight Co. manufactured the lighting units especially for this type of illumination, as it requires a different lighting unit from the ordinary lighting problem. This unit has an extremely wide spread both horizontally and perpendicularly, which enables the player to follow the flight of the ball, no matter where it goes. Even in the rough it is easy to follow and find, at least most players have had that experience so far; that is why I say there is no doubt about the success of 'night golf' from an illuminating viewpoint, if this type lighting unit is used.

"The course has an average of 3 feet candle meter reading on the ground. The
Night view of No. 4 hole shows how correct lighting makes the hole splendidly playable.

average reading up in the air in the path of the flight of the ball is somewhat higher, estimated at approximately 5 feet candle meter reading.

"The total wattage is 153 kw.
"The total lumens is 3,448,000.
"All open type diffused projectors are used.

Spacing Varied

"The spacing is of necessity varied on account of the extreme roughness of the lay of the ground and the numerous trees. There is an average spacing of 60 yards. All tee lights are small dome type or single unit projecting type reflectors. The reason for using the projector type on tees was to project light well out in front of the tee, as in many cases it was not possible to place the first fairway light in a position so the player could have a clear vision of the ball from the time it left the tee. The first fairway light in all cases is the Da-Lite No. 3,000 triple unit, with an extremely wide spread. All other fairway and green lights are Da-Lite No. 2,000 double unit. In all cases the lights are placed in a position so the player will not be facing the light.

"There is a total of 53 units, all open type diffused reflectors; 10 triples 4,500 watts each, 37 doubles 3,000 watts each and 6 singles 1,000 watts each, making a clear white light."

Without good lighting installations miniature courses and driving practice areas are not at all equipped to get into the good earning class. The miniature courses have seen this quite plainly but many of the driving lots still have the lesson to be learned. Those of the driving jobs that have been built on a fairly permanent basis and with good lighting have paid off on the installation and operation cost quickly, barring a few exceptions where location and lack of parking space ruled the owners out from the start.

Night Lighting No Novelty in 1931?

Stranger things have happened in the golf business than the development of a competitive situation calling for illumination of many of the fee courses in metropolitan districts. Many of the lighting companies report that they are figuring on golf course jobs although the Da-Lite outfit is the first one to put in a successful installation. Curtis Lighting, Inc., has completed tentative plans for an 18-hole full length course job in the Chicago district and a 9-hole course in Indiana. Curtis has had some experience in driving course lighting; one of the Curtis jobs being illustrated.
The driving course shows a practice range on which 500-watt floodlights are mounted. The floodlights on the roof are of the distributing type which diffuse the illumination over the area of the tees and the foreground. The units on the posts are of the concentrating type and are directed down the course as a method of illuminating the ball in flight.

In general, the Curtis procedure has been (on the full size course installations they have planned) to use 1,500-watt floodlights throughout. Because of the vast extent of the area covered and the fact that the higher the wattage the more efficient is the lamp and also the unit, there is no necessity for using a greater number of small units. Furthermore, one must attempt to keep the mounting stations, which form an additional obstruction on the course, down to a minimum in number. For this reason, where the layout permits, Curtis attempts to use stations between the fairways in the rough in such a way that two fairways may be readily covered from one station.

One unit is directed over the tee and two units projecting their beams from different locations are required for each green.

The two units are used so a man will never be entirely in his own shadow.

Beyond this, Curtis averages one unit every 30 to 40 yards of fairway. Of course, that does not mean one post every 30 or 40 yards and in fact the usual average is in the neighborhood of only two posts per fairway. The units being directed at different angles from the posts so as to cover different sections.

---

**Cleveland Host to Tri-City Club Managers**

CLUB managers from Pittsburgh, Detroit and Cleveland gathered at Spring Valley C. C. (Cleveland district) August 22 for a field day that goes down in the archives in bold face type. The party started with a buffet luncheon at the Hollenden and ended with a midnight supper on the clubhouse porch.

The Cleveland tribe put the party on in grand shape. President George W. Enger of the Cleveland district had J. A. McGooogin as general chairman of the reception committee and there were by actual count 26 associated committeemen to make sure that everyone was treated royally.

Golf and other field events of such fascinating character as an egg catching contest worked up the appetites of the assembled multitude.

---

**Craig Wood Wins New Reddy Tee Event**

CRAIG WOOD, Forest Hills C. C., shooting 70-66-136, won the first Reddy Tee pro-assistant $1,000 tournament played at Green Brook C. C., August 25. There were 152 entrants and a gallery of 1,500 watched the event, attesting to the popularity of a tournament that assembles the pros and their assistants.

The Nieblo Mfg. Co., which put on the party, plans to have three of such events next year; one in Westchester, one in New Jersey and one in Chicago. Wood picked up $200 for first money. Johnnie Kinder of the home club won $150 for second place, four strokes behind Wood. There were 16 cash prizes for pros and five for assistants, the first money for assistants being $75. There also was a $50 special prize for the best 18, which young Mr. Wood added to his list of current assets.
The new clubhouse of Maketawah C. C. at Cincinnati, one of the finest of the new clubhouses completed this year.

**Locker-room Service Shows Class of Management**

"I can tell you the kind of management in any golf club by spending five minutes in its locker-room." That remark was made to one of GOLFDOM'S staff by one of the country's most successful managers, a comparatively young man who was born into the business, his father being one of the veterans of the club and hotel field.

The more you ponder on the statement the sounder it listens. When you get close-up the locker-room is the social center of the club and to have it run on any other than a thoroughly thoughtful and satisfactory basis is a sorry blot on the entire club operation. In the locker-room occurs the most violent rush-hour of club business. The members always are in a hurry for service, always duly anxious to have their guests impressed with their own importance and the character of the club, and, unfortunately, always inclined to take perfection of the service as a matter of course. With the locker-room beverage business usually the most profitable part of house operation, and with a proper locker-rental figure the locker-room assumes an importance in the club's financial picture that, in itself, should warrant close supervision on the manager's part.

With only a nominal set salary, the locker-room chief's income from valet fees and tips (notwithstanding the universal non-tipping rule) is sufficient to get a good man to head the locker-room staff. A listless, negligent locker-room staff, especially if its men are not good at remembering the names of members, will do the manager, or the club, no good.

Previously inference has been made to the spiritual phase of locker-room operation. When the lid is clamped on tightly, as it is at Hillcrest, Los Angeles, there is required the most exacting standards of locker-room operation inasmuch as the locker-room lacks what some are pleased to term a compensating factor.

**Must Know Each Member**

Manager K. L. Loeb of Hillcrest is of the opinion that a star head locker-room man is an absolute essential. Of his man and the locker-room work Mr. Loeb tells GOLFDOM:

We have at the Hillcrest C. C. approximately 220 regular players. Our locker-room attendant has been with us ever since the club opened, and has familiarized himself with the members to the extent that he knows each member by name and addresses each by name, which I believe is an extremely important factor.

At the present time, we are operating with one locker-room man daily, and an assistant on Saturdays and Sundays. The attendant's routine is as follows:

When he arrives in the morning he opens each locker, and places therein three or more bath-towels, depending on how many towels the particular member is accustomed to using after his shower;
soap, and all the things necessary to make the member feel comfortable as possible after his game. The attendant is also instructed to place in each locker paper slippers for each member, in order to avoid the possibility of contracting a foot infection, which is a fairly easy thing to do in a place where a large number of men congregate.

We personally take care of all the laundry, and whenever a member leaves, the attendant is instructed to take the undergarments, wool hose, sweaters and golf suits and keep them at all times in a presentably clean condition, and that, of course, includes polishing and cleaning shoes.

Another item I believe to be of the utmost importance is that we do not allow any alcoholic liquor whatsoever to be served or used in the locker-room.

Loeb insists on each detail of the locker-room being immaculate. With this department of the club subjected to such hard use the head locker-room man must carefully guard against any untidiness in the locker-room and bath department and immediately report any need for repairs.

Especially do the rugs in locker-rooms require attention. An altogether satisfactory locker-room rug is still to be invented, according to most managers. Spiked shoes ruin the rugs quickly, and involve a more serious danger to the player because of the frequency with which members slip when walking with these shoes on hard surfaces.

Bath Department Equipment

A significant detail in locker-room operation is the character of toilet articles in the bath section, points out Hal Rolfe, manager of Wheatley Hills G. C., East Williston, L. I. Mr. Rolfe has his head locker-room man keep the bath department supplied with shaving supplies of the best grade, superior grades of talcum powder, toilet water, hair tonic, first aid material and other items indicating that women have no monopoly on vanity. Scales, sponge rubber bath mats and shower mats instead of the insanitary wooden duck-boards, paper slippers, name woven bath and face towels and bath stools are equipment details of the Wheatley Hills establishment.

Mr. Rolfe has a masseur on duty Saturdays, Sundays and holidays in one of the sleeping rooms off the second floor for the convenience of the members. This is getting to be a rather usual element of service at the better clubs and one that seems due to grow among metropolitan district institutions. In Chicago this season, one firm installed masseurs, health lights, girth control equipment, etc., in some of the clubs on a profit-sharing basis. Like all experiments in the earlier stages this was not an unqualified success, the installers not making the money they expected due to the investment required, but the club members took to the service and where room is available it is expected that this sort of a service will grow in popularity and profit.

The Wheatley Hills locker-room has two floors with an open well in the center. The regular membership is limited to 250, with about 75 per cent active, and although there are only 251 lockers, Rolfe always has enough lockers to care for guests. A head locker-room man and one assistant care for this part of the plant except on Saturdays, Sundays and holidays during the busy season. The head locker man cares for the lockers, members’ laundry, shoes and general service, with the assistant doing general cleaning, scrubbing of floors, toilets, wash-rooms, etc. The second assistant, when on duty, assists both men. The above detailed duties are performed in the morning, leaving the men free to attend to the members’ personal needs the rest of the day.

Women’s Locker-Rooms Important

In the last few years there has been a decided improvement in the women’s locker-room and bath facilities at golf clubs. Practically all of the newer clubs have adequate and beautiful private facilities for their women players.

In the operation of this department at the better clubs there is employed an array of toilet articles of extent and character that would do credit to many of the top grade beauty shops. Many managers complain that they have difficulty in getting the right sort of a woman to place in this work, for the women players are not lavish with tips and are exceedingly exacting. When the facilities are small and many women have to share lockers it takes a maid of ability, even disposition and hustle to care for the rush requirements.

The women’s department makes fastidious cleanliness and attractive appointments necessities and the manager who does this on the limited money usually available has mastered a tough job.
<table>
<thead>
<tr>
<th>Name of Grass</th>
<th>Scientific Name</th>
<th>Time Required to Produce Good Turf</th>
<th>Wet or Dry Soils Adaptation</th>
<th>Sandy or Clayey Soils Adaptation</th>
<th>Acid Soils Tolerant</th>
<th>Cold or Hot Weather Tolerant</th>
<th>Uses</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agrostis alba</td>
<td>Redtop, marsh white southern, English bent or herd grass</td>
<td>One season</td>
<td>Adapted to wet and tolerant of dry soils</td>
<td>Adapted to clayey soils</td>
<td>Tolerant</td>
<td>Resistant to cold and fairly tolerant of heat</td>
<td>Fairways, greens and lawns</td>
<td>Sod forming habit of growth. Lasts about 1 year under close mowing. Used chiefly as a temporary grass</td>
</tr>
<tr>
<td>Agrostis palustris</td>
<td>Rhode Island bent, Colonial bent, Brown top, “Goifalawn,” “Astoria bent” and “P. E. I. bent”</td>
<td>One season</td>
<td>Adapted to both moist and dry soils</td>
<td>Adapted to clayey and sandy soils if well drained</td>
<td>Tolerant</td>
<td>Resistant to cold and fairly tolerant of heat</td>
<td>Greens, lawns and fairways</td>
<td>Probably used more extensively than any other seeded bent. German mixed bent contains about 75% of it. Sod forming habit of growth</td>
</tr>
<tr>
<td>Agrostis vulgaris</td>
<td>Creeping bent, Seaside bent and “Fiorin”</td>
<td>One season from seed 2 months</td>
<td>Adapted to moist soils</td>
<td>Adapted to clayey and tolerant of sandy soils</td>
<td>Very tolerant</td>
<td>Resistant to cold but not hot weather</td>
<td>Greens, lawns and fairways</td>
<td>German mixed bent contains about 5% of it. Seaside bent also called Agrostis maritima. Sod forming habit of growth</td>
</tr>
<tr>
<td>Agrostis stolonifera</td>
<td>Velvet, dog brown bent</td>
<td>One season</td>
<td>Adapted to moist soils</td>
<td>Adapted to clayey and tolerant of sandy soils</td>
<td>Very tolerant</td>
<td>Resistant to cold but not hot weather</td>
<td>Greens and lawns</td>
<td>Adapted to about same region as Kentucky blue grass. German mixed bent contains about 15% of it. Sod forming habit of growth</td>
</tr>
<tr>
<td>Poa annua</td>
<td>Annual blue grass, spear grass or meadow grass</td>
<td>One season</td>
<td>Adapted to moist soils</td>
<td>Adapted to clayey soils</td>
<td>Tolerant if soil is rich and well drained</td>
<td>Resistant to cold but not hot weather</td>
<td>Fairways and lawns</td>
<td>Requires fertile soils and responds to lime treatments. Sod forming habit of growth. Will not stand close mowing</td>
</tr>
<tr>
<td>Festuca rubra</td>
<td>Red fescue</td>
<td>One season</td>
<td>Adapted to moist soils</td>
<td>Adapted to clayey soils</td>
<td>Tolerant</td>
<td>Resistant to cold but not hot weather</td>
<td>Greens, lawns and fairways</td>
<td>Sod forming habit of growth. The failure of this grass last season resulted in poor and unplayable greens throughout country</td>
</tr>
<tr>
<td>Festuca ovina</td>
<td>Sheep’s fescue</td>
<td>Very tolerant</td>
<td>Adapted to dry soils</td>
<td>Adapted to clayey soils</td>
<td>Tolerant</td>
<td>Resistant to cold and tolerant of heat</td>
<td>Rough</td>
<td>Especially adapted to soils which are thin, sandy and rocky. Bunching habit of growth</td>
</tr>
<tr>
<td>Festuca tenuifolia</td>
<td>Fine-leaved fescue</td>
<td>Tolerant of dry soils</td>
<td>Adapted to clayey soils</td>
<td>Tolerant</td>
<td>Resistant to cold and tolerant of heat</td>
<td>Lawns</td>
<td>Variety of sheep’s fescue. Bunch forming habit of growth</td>
<td></td>
</tr>
</tbody>
</table>
Pro Credit Appraisal Shows Better Method Need

By HERB GRAFFIS

O
F ALL subjects on which one of reporo-
torial temperament may write in a
spirit of sweet Christian charity and
helpfulness, credit undoubtedly ranks first.
So, in this review of that interesting vol-
ume, "The Quarterly Composite Credit
Report" of the golf club and ball manufac-
turers' associations there is malice toward
none but a questioning unlift of critical
eyebrows toward plenty.

The plot of this far too big book is
carelessness. And may we make it plain
even to our own good cash customers,
the manufacturers, they rate about 50-50
on carelessness with the professionals. In
the first casual look over the book one of
the writer's acquaintance with pro per-
onnel is amazed at the easily corrected
wrong addresses to which pro bills are
being sent. There is a deplorable lack of
cooperation among the manufacturers in
this respect, for most of the wrong ad-
dresses could be corrected inside of a week
if the manufacturers' salesmen were in-
structed to religiously report on this mat-
ter and clear the information through the
association. The number of accounts from
$5 to $30 allowed to run six months or
more after shipment indicates to this kin-
dergarten student of business technique
that something is sour with the collection
methods. Although radio stores, sporting
goods stores and other outlets in addition
to pros are given on the tardy roll of the
associations, the pros naturally constitute
the bulk of the book, probably for the rea-
son that the pros do the greater part of
golf goods retailing. The accounts in ar-
rears are divided on approximately the
following basis:

<table>
<thead>
<tr>
<th>Amount</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $100</td>
<td>47%</td>
</tr>
<tr>
<td>$100 to $500</td>
<td>36%</td>
</tr>
<tr>
<td>$500 to $1,000</td>
<td>11%</td>
</tr>
<tr>
<td>$1,000 to $2,748.39</td>
<td>6%</td>
</tr>
</tbody>
</table>

Tough Luck Plus Ignorance

This amount of $2,748.39, which is the
peak on the credit list I examined happens
to be owing six manufacturers by a pro
whom I know. Now this fellow, I am
satisfied, is honest but he certainly has not
been reeking in luck during the last two
years, and he has plenty of need of help
in making him a retailer. He's improv-
ing fast and I wouldn't be surprised to
see the October report show a decided im-
provement.

Since the association started to function
on this credit list and since the able busi-
ness pros, the P. G. A. and GOLFDOM started
plugging on this credit situation there has
been a vast improvement. More plugging
and a complete clean-up is today's motto.

Ben Johnson, secretary of the Golf Club
Manufacturers' association, told the writer
recently that his collection letter sent out
in behalf of the club and ball makers last
fall, brought in $50,000. To me that proved
two things: (a) the boys would kick in
when they had the dough, and (b) the
manufacturers need to jazz up their collec-
tion work during the more active parts
of the season. Johnson also spoke of the
letters on credit rating the association got
from clubs considering hiring pros. Some
of the fellows who could not be reported
on favorably undoubtedly had bills in dis-
pute. It's to the mutual advantage of pros
and manufacturers to get these wrangles
ironed out pronto, and this investigator is
inclined to think that there are a lot of
such cases of debate, judging solely from
the large number of small items shown in
the report.

Pros Not Overloaded

As a general thing the amounts owing
are not at all out of line considering the
inventories necessary at the pro shops.
We notice several cases like that of a
young fellow in a pretty good club who
owes $686.65 distributed among nine manu-
facturers. There may be some signifi-
cance in such instances for they may mean
that the boy is getting too little from each
of too many manufacturers rather than a
fairly good stock from whatever of a
smaller group of leading manufacturers he
decides to deal with. This is one of the
puzzles of merchandising policy the pros
are having to struggle with more and more.

As one goes over the list and considers the cases of individuals with whom there is a close bond of acquaintance, it becomes perfectly obvious that the credit situation in the pro business is not a matter of lack of business integrity but of a need for more business education and better accounting methods in the pro shop. Ed Conlin, secretary of the Golf Ball Manufacturers' association, told Goldom's editor that the accounting forms presented in the U. S. Rubber book, "Pros, Players and Profits," and designed especially for the pro, met with a warm reception and sale, although they were presented too late this spring to be used by many of the boys. That is an accurate indication of the pros' eagerness to get their operations on a business basis.

Is 2½ Per Cent Misleading?

The pro discount arrangement adopted early this year after conferences between the manufacturers and the P. G. A., has had its effect on the pro credit situation but whether or not the effect has been entirely beneficial some of the manufacturers doubt. The wise pro takes his 7% on the 30 day section of the agreement (which is in reality 40 days because the discount deadline usually is the 10th of the month following). He discounted his bills before and the new terms are just an additional reward for his customary merit. The 5% in 60 days helps a lot of the boys who are anxious to discount but are in clubs where stock doesn't move fast. The critics then state that the 2½% in 90 days is inclined to lead further astray some of the dilatory and careless ones, for if a fellow isn't paying in 90 days there is something wrong with his ordering and his way of doing business.

One of the manufacturers is making good use of this 7% discount by showing that it means 28% on the stock of his goods at a representative pro shop. This maker's bulletin reads:

7% AND WHAT IT MEANS TO YOU
Let us take the experience of Willie Brown.

Brown started the season March 1st with purchases totaling $250.00, which were discounted at 7% on April 10th. Meaning a saving to him of $17.50.

Brown made a complete turnover of his stock four times during the season, discounting all bills each time. This netted him a profit of $70.00, or 28% on a small investment of $250.00.

If it had been necessary for Willie Brown to borrow this money for the season, or a period of eight months his interest would have amounted to only $10.00, which would still net him $60.00 or more than the cost of a set of irons.

Are you going to take advantage of the 7% next year? All that is necessary is to set aside a small amount each month in order to create a fund, which will enable you to discount all invoices beginning with the start of the season.

Think it over—have you been getting everything out of the discount that is to be gained?

The 7% discount used by the smart pros who do a large volume of business has been responsible for hand-to-mouth ordering that has been driving the manufacturers dizzy in this record year of the golf business. The wise guy wants to keep his money working so he minimizes his slow moving inventory and depends on the factory for rush shipment for replacement of merchandise. In normal years that would have been O. K., but in this year's hectic day and night operation the leading manufacturers have rarely been able to keep up with the pace. Steel shafts coming in for a big play have eased the strain somewhat but the drag on the hickory inventories of manufacturers has been heavy enough and still kept the extensive plant facilities necessary for conditioning hickory in active use.

With the new ball in prospect, it is our opinion that the manufacturers have had hell's own time. A manufacturer would be loco to make and stock heavily a product that was going to be without benefit of clergy after the first of next year. But in the meanwhile a record demand for the current ball comes along. The new ball, so far as can be learned, has had such a frigid reception that there are close-up rumors of the U. S. G. A. already considering an alteration and then the ball makers can set themselves for another session of dancing with tears in their eyes.

Verily, it's a merry whirl, this golf business, for the manufacturers as well as the pros. When you get right down to it the pros and the producers are the least of each other's respective troubles.

FLAGS should be colorful and flag-poles brightly painted. Not only is visibility helped, but the bright colors add to the beauty of a well-kept golf green.
Of the four sprinklers shown, the one at the right is an automatic tee sprinkler. The others are automatic sprinklers for the adjacent green.

How Much Water and Where Is Leading Irrigation Query

By WENDELL P. MILLER
(PART FOUR)

The main point in planning fairway irrigation is for the club to know that it is right, that everything it does is right, that the installation is permanent unless the life of the property is limited, and that their operating costs can be kept at a minimum. Clubs which are not operated on the "penny-wise-pound-foolish" basis will find it advisable to have a careful investigation made of their entire situation and careful estimates of the cost of the various types of construction. With this information at hand, prepared by competent authorities in which the club has confidence, the club will be able to decide intelligently exactly what course to pursue.

How Much Water?
There is a wide variation in the water requirements of different clubs—even for the same purposes. Different clubs enjoy polo fields, grass tennis courts, large and small gardens, landscaping, dormitories, cottages, guest rooms, pools, ponds and stables in endless combinations. The clubs seldom keep accurate records (if any) of the water consumption. The figures we have available would mean little to any particular club because of the wide variation in area, soil, topography and climate, hence the writer would not like to be quoted as saying that fairway irrigation, for instance, requires this or that number of gallons per day. However, examples throw considerable light on the subject.

The Clubhouse
By actual meterage, the Wakonda clubhouse at Des Moines, Iowa, not including the outdoor swimming pool, used 13,500 gallons of water per day in May and 25,600 gallons per day in June. This is a big and busy clubhouse. Midlothian clubhouse and six "cottages" are using approximately 30,000 gallons per day this season. North Shore clubhouse at Glenview, Ill., was figured at 18,000 gallons daily, with a peak of 22,000 gallons. We are told that Olympia Fields uses up to 100,000 gallons daily. Divide this by four to get an average size club and you have a peak of 25,000 gallons. There you have it—for an 18 hole course private clubhouse, 13,500 to 30,000 gallons per day, not including swimming pools, stables, etc.

Tees and Greens
Knollwood Club (New York) has been