



of those who came to listen to the experts and to inspect the manufacturer's displays.

Starts Greenkeepers' Year

guilty, as some of the boys alleged, of putting on the Ritz.

To run through the highlights of the program:

After Col. John Morley had registered the welcome and keynote speech of the clinic, Tom Winton, veteran successful golf course architect, gave the greenkeepers a condensed and exceedingly helpful primer of architecture. Tom outlined a nice balance of playing factors and maintenance aids, putting his material in such shape that it probably will prevent some of those tragic jobs of construction and alteration done by the loving hands at home.

Martin Davey, president of the Davey Tree Expert Company, warned his listeners of the heavy toll golf course trees may pay as a result of the prolonged drought of last year. Davey detailed some of the important work that is necessary if trees are to be restored to healthy condition.

Explains Mineral Fertilizer Functions

R. J. H. DeLoach, director of agricultural research for Armour Fertilizer Works, presented data from an army of soil scientists in arriving at his conclusion that the trend is toward mineral fertilizers rather than organics and was just one more shot of dynamite in the lively mineral-organic set-to. Excerpts of the address are appearing in *GOLFDOM*. The complete address will be published in

pamphlet form at some later day by the Armour organization.

Theodore E. Odland, agronomist of the Agricultural Experiment station of Rhode Island, told of the characteristics of good seed and the sources of supply of seed commonly used on American golf courses. He presented some interesting records of seed produced at the Rhode Island station and the influence of fertilizer on this production. He dwelt briefly on the prospect of greenkeepers raising bent grass seed for limited needs on their courses.

Glad Hand from the Green Section

Ganson Depew, veteran in the official roster of the U. S. G. A., and the new chairman of the Green section, told of the plans of the section in extension of its practical assistance to greenkeepers. The title of his address was "Cooperation." He referred to the cooperation between the government and the Green section and that between the greenkeepers and the section, and forecast that an extension of this teamwork would bring the section, the greenkeepers and the various state and college turf research agencies into a position of much greater value to the golf clubs.

The genial delegate from the U. S. G. A. told of the struggles and achievements of his predecessor, Wynant Vanderpool, and Dr. John Monteith and Kenneth Welton in their work to assist greenkeepers. Depew commented:

"Since the Green section was established, I fear there has been a feeling by some greenkeepers that we were doing something to usurp their privileges and were treading on forbidden ground, but nothing is farther from the truth. The work, on the contrary, was intended to be a help to those who knew very little about the conditioning and maintenance of new golf courses which are constantly springing up and to give greenkeepers of experience valuable information obtained from experimental and research work.

"There was absolutely no thought or intention of forcing anything on greenkeepers or clubs. At a large expense the Green section simply offers its advice and experimental work to anyone who wishes to use it or ignore it, as seems best."

He further referred to the action of the Golf Unions of England, Scotland, Ireland and Wales in connection with greenkeeping problems, in showing the advantages of co-operation.

In his remarks on the extent of the Green section work, the chairman stated that the Green section annual expense of \$42,000 is \$9,000 more than is received in dues from member clubs. He paid high tribute to the achievements of greenkeepers and their essential place in the golf field, and closed with an earnest plea for the closest teamwork.

Water Problems to the Front

Two papers on watering lead off Wednesday. John MacGregor, greenkeeper at Chicago G. C., told of his work in connection with a pioneering installation of fairway watering in the midwest and very frankly confessed to the shortcomings in installation and operation he discovered while he was getting the job into satisfactory shape. The Chicago course expert's counsel was to get the fairway watering started early enough in the season, and to employ experienced advice and caution before leaping into fairway irrigation.

Dr. Howard Sprague, in speaking of "Some Water Relations of Turf Plants," gave what many considered the feature address of the meeting. Sprague, bright specimen of the younger school of turf scientists, gave the greenkeepers much helpful data from the New Jersey and other experiments. His paper, which is of especially high value in connection with the growth of fairway irrigation, appears elsewhere in this issue.

Edward B. Dearie, jr., golf course builder and greenkeeper, was the third of the

afternoon's performers on the subject of water. Dearie went into the subject of drainage from the viewpoint of the man who reaps the harvest of misery and expense if the drainage installation isn't made correctly. His paper had many practical pointers on the proper construction and supervision of a drainage system.

Prof. J. W. White of Pennsylvania State College told of the work done at Penn State in determining the effect of mercury compounds and arsenate of lead on soil nitrification, calling attention to the fact that mercury compounds necessary to combat fungous diseases of turf grasses may reduce, seriously, the available nitrogen of soils which are in need of lime. Arsenate of lead, stimulated the production of soil nitrates.

B. R. Leach, in his usual incisive way, counseled the greenkeepers to pay more attention to selling themselves to their clubs and members. He detailed some of the sales resistance encountered. Leach told of the value of figuring the budgets and doing the course cost accounting in equipping the greenkeeper to talk to his chairman and officials in terms they could understand. The Jerseyman again banged away at his pet horror, Service Bureau buying, and pointed out where that noble experiment had not only failed to justify itself in a financial way, but had been a handicap to greenkeepers' development of a more complete mastery of their business.

Leach again asked for a formal and definite recognition of the greenkeeper in the Green section's work, and forecast that the day was not far distant when the greenkeepers would have representation in the Green section administration. "When that day comes," Leach stated, "the status of greenkeepers as individuals and members of the profession, will be rounded out and extended in a way the greenkeeper never has yet enjoyed."

Defines Greenkeeper-Chairman Status

Prof. L. S. Dickinson of Massachusetts Agricultural college impartially criticized greenkeepers and chairmen for their common errors and set forth some sound policies for their harmonious relations. He spanked the greenkeepers for a tendency toward an inferiority complex, which he traced to a failure to recognize that the greenkeeper was operating an important factory involving considerable investment. He turned chairmen over his paternal knee and whacked out a warning against

COL. MORLEY AGAIN HEADS N. A. G. A.

John Morley, veteran greenkeeper of the Youngstown (O.) C. C., was unanimously re-elected president of the National Association of Greenkeepers of America, at the 1931 annual convention. The Colonel has been president of the organization since its inception.

The only change in the official roster was the election of John Anderson, Crestmont C. C., West Orange, N. J., as fifth V. P., in place of Lewis M. Evans, resigned. Evans, who recently located in Ohio, formerly registered from the Philadelphia district.

New York was chosen for the 1932 meeting, with the convention hall and hotel yet to be determined.

Officers of the N. A. G. A.:

John Morley.....	President
John MacGregor.....	First V. P.
W. J. Sansom.....	Second V. P.
Robert Hayes	Third V. P.
George Davies.....	Fourth V. P.
John Anderson.....	Fifth V. P.
Fred Burkhardt	Treasurer
John Quail	Secretary

using the course as a toy, monkeying around with the things that made it tick, and in general doing exactly the fooling with each little detail that he wouldn't permit in his own plant. After some specific and constructive criticism along this line, Dickinson went to work on the present trend of extensive mechanization of course maintenance. Instead of saving the money represented in machinery economies, the Amherst expert pointed out that the possible saving is too often diverted to riding one of the chairman's hobbies, for instance the building of a new green that eventually results in increased maintenance cost. Dickinson figures there should be some way of giving the greenkeeper credit for the money he saves while maintaining a high standard of course condition.

He advised a close inspection of course accounting so figures couldn't be juggled

at the expense of the course. He referred to the twice-a-season course condition appraisal he has written about in GOLFDOM. The complete text of the convention address will appear in these pages.

The accounting phase of the greenkeepers' work was handled in enlightening fashion by E. W. Doty of the Cleveland District Golf association. Doty presented an outline of primary and secondary course maintenance costs and showed the greenkeepers where to watch for unfair allotments of costs.

Joe Williamson, greenkeeper at Scioto, gave an excellent resume of practical greenkeeping as shown by his successful experience of more than a quarter century in the U. S. and prior years in England. This address will appear in an early issue of GOLFDOM.

The program concluded with a lively but limited open forum discussion, conducted by Prof. Dickinson. Soil acidity was the feature subject.

AS AN example of what the P. G. A. sections are up against in the problem of the false-alarm pro, and how these sections take it on the chin without whining, we can refer to a case in Pittsburgh last season. At one of the pro-amateur events three of the punks, masquerading as pros, signed tickets at the club. The burglars took a run-out. When the matter was called to the attention of the Pittsburgh P. G. A. officials, the club bill was promptly paid, although the offenders were not P. G. A. members and the event was not under P. G. A. auspices.

Whether or not the good pro is a member of the P. G. A., the P. G. A. is doing a good job for him in accepting a responsibility for pro actions. We think the sections are too broad, many times, in handling the task of being social sponsor for every lame-brained chump who labels himself a pro, with no credentials to back up his claim. In handling this work they should point out to club officials that P. G. A. members must be responsible before they are taken into membership. In the majority of cases (and certainly in the Pittsburgh case) the P. G. A. sectional officials are hard-boiled enough to make a second offense unhealthy for the punks.

Apparently, to the official designation of Albert R. Gates as "business administrator and counsel," the boys had better add "house dick"; protection against the punks is a primary need of the worthwhile professionals.

How and Why of Water's Effect on Golf Course Grasses

By HOWARD B. SPRAGUE

Agronomist, New Jersey Agricultural Experiment Station

WATER is one of the most important substances connected with life in this world of ours. The plant uses water in some form at every stage in its life period. Germination cannot proceed without moisture, and the first organs produced by the growing plant are roots for the absorption of water. Water makes up 50 to 90 per cent of the growing grass plant on fairways, tees, and greens. Even such parts of the plant as cell walls, vessels for translocation of food materials, fibers, and tissues for mechanical support, etc., are produced in the plant by combining water with other substances, from 35 to 55 pounds of water being required for every 100 pounds of such tissues formed.

The material which plants use as food, principally the starches and sugars, require 55 to 60 pounds of water for every 100 pounds of food manufactured. The plant's food is actually made in the leaves of the plant, but this process can only take place when cells and cell walls are kept moist with water. Nitrogen and minerals which the plant must obtain from the soil, and which we frequently add in the form of fertilizer, can only enter the roots when dissolved in water. These minerals are transported to various parts of the plant in a stream of water which extends from the roots, through the stems, to the very surface of the leaves. The food manufactured in the leaves is carried throughout the plant wherever it is needed, but only

as it is dissolved in water. The combination of sugars, starches and other substances with the nitrogen and minerals to form protoplasm and cell walls for new cells, in roots, leaves and stems, can take place only with an abundant supply of water.

When the plant finally dies, it is decomposed by bacteria and molds which also require moisture for their activities. In nature, the decaying plant is broken down to its elemental components, which are water, carbon dioxide gas, and minerals. At an intermediate stage in this decay humus is produced, and when added to the soil this substance greatly modifies its water-holding capacity.

Seasonal Supply of Water

Since water plays such a vital part in the life of plants, it is extremely necessary that we consider the problem of providing enough moisture for normal growth. We have two principal sources of water on golf courses; one is natural rainfall, and the second is irrigation by some one of several systems. The goal that greenkeepers and others interested in turf management should keep in mind is that natural rainfall must be supplemented by irrigation, *only* to the extent necessary for moderate growth, and never in excess. The critical season of moisture deficiency in the northeastern states usually comes in June, July, and August, because of the

Table 1. Comparison of Rainfall and Evaporation from Free-Water Surface Averages, 1924-28, Inclusive

Station		Apr.	May	June	July	Aug.	Sept.	Oct.
Columbus, Ohio	{ Rain.	3.07	3.52	4.27	4.74	2.49	2.99	2.33
	{ Evap.	3.23	4.37	5.14	5.53	4.70	3.42	1.95
Ithaca, N. Y.	{ Rain.	3.09	2.82	3.46	3.86	2.92	3.51	3.18
	{ Evap.	3.24	3.41	4.66	4.92	3.80	2.53	1.46
New Brunswick, N. J.	{ Rain.	3.53	3.35	3.58	5.47	6.55	4.47	4.63
	{ Evap.	3.84	4.89	5.39	5.48	4.52	3.64	2.72
Chapel Hill, N. C.	{ Rain.	3.99	2.70	5.10	5.44	6.22	7.38	2.55
	{ Evap.	4.12	5.05	5.56	5.83	5.16	4.19	2.79
Wichita, Kas.	{ Rain.	4.29	2.66	5.35	3.01	2.84	3.22	2.97
	{ Evap.	6.22	7.56	9.26	9.42	8.85	6.67	4.25

Table 2. Conditions for Germination of Grass Seeds

Kind of Grass	Optimum	Length of Period	
	Temperature Degrees F.	at Optimum Majority Seed	Temperature All Seed
Kentucky bluegrass	70-85	14 days	28 days
Canada bluegrass	70-85	14 days	28 days
Redtop	70-85	5 days	10 days
Bent grass	70-85	10 days	21 days
Red fescue	70-85	10 days	21 days
Fine-leaved fescue	70-85	10 days	21 days
Meadow fescue	70-85	5 days	10 days
Rye grass	70-85	6 days	10 days
Bermuda grass	70-95	10 days	21 days
Carpet grass	70-95	10 days	21 days

Germination period is considerably extended when temperatures fall below those indicated.

(From U. S. D. A. Department Circular 406, "Rules for Seed Testing," 1927.)

relatively low efficiency of the moisture which is applied in this period. The rate at which water is lost to the air by evaporation largely determines the efficiency of rainfall. Comparative figures for rainfall and evaporation for the 5-year period from 1924-1928, inclusive, are given in *Table 1* for 5 locations in the eastern United States. Whenever evaporation is greater than rainfall, artificial watering is required on greens. If evaporation is $1\frac{1}{2}$ to 3 times as great as rainfall, watering of closely cut fairways will be necessary also, particularly if the soil has a low water-holding capacity.

Germination Period

The most critical times in the life of any plant are the period of germination, and the stage of growth just following when the young plant is becoming established. Water must be provided before the process of germination can even begin. A continuous supply must be maintained after the young shoot emerges or death will result. Grass seed is planted very shallow because of its small size, and the difficulty of maintaining the moisture content is therefore great. A few hours of very drying weather may remove enough water from the surface soil to kill a stand of seedlings which has taken weeks to establish.

Some grasses require a longer period for germination than others, and the moisture content of the surface layers of soil must be maintained until the plant has developed a good sized root system. The germination period for 10 of our turf grasses is given in *Table 2*. It is evident that the grasses which are most useful for turf on golf courses require 2 to 4 weeks for germination, with temperature of 70 F. or above. When the temperature is lower than 70, more time is required. The

period of establishment follows germination, and moisture is even more necessary for this phase than for germination. Sprouting seeds may be dried for short periods without great harm, but after the first leaf is put out, even a severe wilting may prove fatal.

The common practice among successful greenkeepers is to seed at the season of the year when the least difficulty is experienced in keeping the surface soil moist. It is apparent from *Table 1* that late summer and early fall are the most favorable periods in many regions. The principal concern with such seeding dates should be to allow at least 2 months of growing weather before the temperature of the soil approaches the freezing point. One month of this period is required for germination, and a second month for establishment of the young plants. If grass seed is planted through necessity at other seasons of the year, constant care will be required to insure the maintenance of a satisfactory moisture content. Water must be applied daily and perhaps oftener during dry periods, and in such a manner that a crust is not formed at the surface. New grass may be started at any time during the growing season, if attention is given to the watering; but the most satisfactory period is one in which evaporation is no greater than rainfall.

Soil Moisture

During the germination stage, water is absorbed through the walls of the seed. As soon as growth begins, a root system is developed, and practically all of the moisture required by the plant is taken in by the root system from that time on. Since the plant draws its water from the soil, it becomes necessary to consider the forms in which water is present and the use which the plant makes of each.

For convenience we divide the moisture which may be present in the soil into 3 parts, in the manner shown by *Chart 1*. One part is so closely held by the soil particles that the plant can make no use of it; this is termed unavailable water. The second form of water is that held in the soil by capillary attraction, and most of this is available to plants. The third form

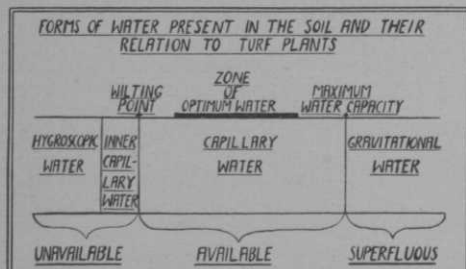


Chart 1. Forms of water in soil

of water is that present immediately after a heavy rain or watering. This water will drain off in a short time, and the plant makes little use of it. Such superfluous water is undesirable because it occupies pore spaces in the soil which should be filled with air. The maximum water-holding capacity is the amount of water which a soil contains after the superfluous water has drained off.

We may compare the water relations of various soils by calculating their capacity for holding moisture in an available form. For example, a certain sandy soil may have a maximum water capacity of 17 lbs. per 100 lbs. of soil. However, in this soil about 4.5 lbs. of water will be unavailable, leaving a potential supply of 12.5 lbs. for use by the plant. For a loamy soil, the supply of available water will probably be 25 to 30 lbs. for each 100 lbs. of soil, more than double that of a light sandy soil.

Fortunately for man, the water content of soil may vary considerably and still permit plants to grow normally. As shown in *Chart 1*, the optimum moisture content lies between the point of maximum ca-

capacity and the point at which no more moisture is available. We term this the optimum moisture content because the plant is able to absorb sufficient moisture to prevent wilting, and there is enough air left in the pore spaces of the soil for healthy root growth and activity. At the optimum moisture content, the desirable bacteria and molds are also most active and nutrients are released from the soil particles and organic matter for use by the plant as a result of their activity. Only a portion of the minerals needed for plant growth are supplied in the form of chemical fertilizers. The rest of the plant nutrients are derived from the mineral portion of the soil and the organic matter, as a result of bacterial action.

Source and Supply of Moisture

How shall the optimum moisture content be maintained? Before considering this question we must examine the fate of water added as rain or by irrigation. *Chart No. 2* shows that the moisture added to the soil may (1) run off the surface without entering the soil, (2) percolate through and be lost as drainage water, (3) be absorbed by the soil and lost by evaporation from the surface of the soil or through cracks which develop, and (4) be absorbed by the soil and used by the plant. Obviously, if the moisture supply is deficient, we wish to avoid the first three types of losses and retain as much as possible for the plant. Steep slopes and hard surfaces increase run-off, whereas gentle topography and porous soils reduce it. Percolation may be reduced by increasing the water holding capacity of the soil, but on many courses there are greens, portions of fairways, and tees, where there is too little percolation for healthy growth. Evaporation may be partially controlled by improving soil structure to avoid cracks in the soil, and by topdressing with soils having a desirable texture and organic matter content. From 2 to 3 times as much water is evaporated from sandy soils as from loams, and clayey soils which bake and crack also lose moisture faster than

Table 3. Available Water Held by Soils for Plant Use
Gals. per 1,000 Sq. Ft.*

Kind of Soil	Depth of Soil in Inches				
	1	2	3	4	5
Sandy soil	99 gals.	198 gals.	297 gals.	396 gals.	495 gals.
Av. silt loam	140 gals.	280 gals.	420 gals.	560 gals.	700 gals.
Rich silt loam	208 gals.	416 gals.	624 gals.	832 gals.	1,040 gals.

*One inch water on 1,000 square feet = 623 gallons.

(For field conditions. Calculated from data given by Lyon & Buckman, "The Nature and Properties of Soils.")

TRANSPIRATION

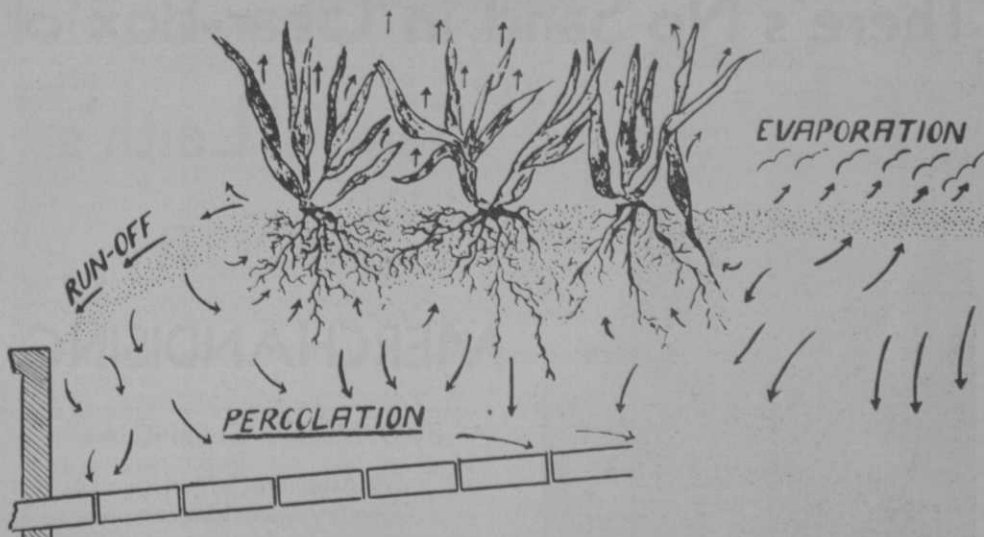


Chart 2. What happens to rain or irrigation water.

loams. However, evaporation is largely controlled by weather conditions and we have not yet found suitable methods of reducing evaporation losses in hot dry periods.

The quantity of water retained by the soil for use by the plant depends on soil texture, structure, and organic matter content. Table 3 shows the available moisture capacities of 3 soil types. The rich silt loam is able to hold more than twice as much water in an available form, as the sandy soil. An important point in this connection, however, is the amount which the plant may draw on. Obviously if the root system is restricted to the upper inch of soil because of unfavorable soil conditions, or wrong methods of treatment, the plant may use only the moisture present in that inch layer. If the root system penetrates 2 inches, the potential supply is doubled, and for 4 inches it is 4 times as great. It is evident that much can be done in the way of increasing the moisture supply for all types of turf, merely by making conditions suitable for vigorous development of the root system.

This authoritative account of the part water plays in grass growth will be concluded in April GOLFDOM.

GEORGE O'NEIL NEW SPORTS HEAD AT FRENCH LICK

GEOURGE O'NEIL, veteran pro and golf architect, has been appointed sports director at French Lick Springs Hotel, the famous relax and laxative spot in southern Indiana. Art Lockwood, for many years in that job, goes to Indianapolis to take charge of the municipality's golf activities.

George has been the mentor of many of our fine pros of the younger school and has been responsible for a number of fine architectural jobs. He was pro at Beverly, Midlothian and Lake Shore in the Chicago district. At the latter club he was reported in the newspapers as having received a \$10,000 fee for cutting five strokes off the game of one of the members; from this reputed fee there was a terrific discount for cash.

Two of the big shot professionals are slated to go to French Lick as playing and instructing pros with George. We understand George is revising the layout of the French Lick valley course to bring the full shot holes nearer to the most popular facilities of the establishment.

SHORT hole tees receive much harder wear than tees from which wood-club shots are played, since an iron shot takes the larger divot. Therefore, build generous tees for your 3-par holes; the turf will be difficult to maintain unless the tee-plates can be shifted to a different spot almost daily.

There's No Sand in Gear-Box of Sandy Leith's SMOOTH MERCHANDISING



Lake Merced's pro, Sandy Leith, displays the same intensity at the top of a mashie shot as he does in his no less skillful merchandising efforts.

By D. SCOTT CHISHOLM

Associate Editor,
Country Club Magazine

a tournament here yesterday. The heavy rain didn't stop them from playing or from buying whatever they needed," was his answer. "I sold over three dozen balls and a few clubs to them besides a number of nicknacks that women always seem to need for a round."

Women Easier to Serve

"Do you like to do business with the women members?" I shot at him and in a flash he said, "Most certainly I do. They are easier to serve than the male species—if they have confidence in you and your merchandise. But you must have their confidence both in the matter of selling your merchandise and in giving lessons. I find them better advertising boosters for my merchandise and it is only natural that I like to wait on them whenever the opportunity presents itself."

At this point my eyes scanned the several sets of clubs resting in the main showcase, all extremely inviting and most attractively displayed. "Is this your entire stock of clubs?" I asked Sandy. I was rather surprised at what appeared to be a meagre display of woods and irons after I was informed that the club boasted of a membership of 350.

"Oh," said Sandy, "I only carry sample clubs. See there, I have six sets of women's wood clubs—all matched. These are only samples. And over there I have five sets of women's irons. I sell my clubs to order. Nothing shoddy. Everything of the finest. I sell a great many women's

A FRIEND of mine who represents a big Chicago sporting goods firm told me a short time ago that Sandy Leith, professional at the Lake Merced G. & C. C., San Francisco, was one of the most business-like professional golfers in all America. "The merchandising world and maybe the banking world lost a leader when Leith took to golf as a livelihood," remarked this friend of mine. All of which interested me.

When I visited San Francisco a couple of weeks ago I decided to look up Mr. Leith and get whatever story I could from him for the readers of GOLFDOM. The moment I stepped into his shop and told him what I wanted, he lost no time in sitting me down at his desk and handing me several sheets of paper along with a couple of short pointed pencils. This was service de luxe. Sandy was wise. He didn't want me to run out of paper or pencil.

Realizing I was in the presence of a very business-like person, a man of action and imagination, I started to question him without a moment's delay. "How's the business?" I asked of him. "Fine. We had more than 100 women players play in



The clubhouse at Lake Merced, with practice green in foreground

clubs because we have a very large membership of active women golfers.

"Then men's clubs are sold to order just the same. I never did carry much stock and for that reason I never have anything stale or out of date on hand nor any unpaid bills to worry about. When a member wonders why he can't come into my shop and pick a brassie right out of stock, I inform him that he can't walk into a first class cafe and expect to be served a properly cooked steak 'out of stock.' It has to be cooked to order—so has his brassie.

Smart Club Cleaning

Over in a corner of the work shop I noticed a lad cleaning clubs with the latest modern cleaning equipment and I also noticed the shiny condition of all the clubs which were stowed away in the racks. "How many sets of clubs do you have to clean?" I inquired. "How many do you think? We have 350 members—now guess." I thought that at least 75% would have their clubs cared for in the shop so I ventured to guess the number about 250. I was truly astonished when he told me he had 340 sets to look after each month, but I later was told that this included the wives of the members proper.

"I take great care of the clubs left in my charge. The iron heads are CLEANED—not merely scuffed over in a half-hearted way. And the wood heads are always rubbed with a mixture of oil and shellac. This process seems to please my members to a marked degree and I receive many compliments on this touch of service. It doesn't take my boy long and the expense is practically nil. I pay my own help. I have all the concessions and the club takes care of

all the payments of my bills. They mail out my monthly statements and give me a check for the total indebtedness on or about the first of each month which relieves me of all this collection worry. My club treats me like a prince and I very much appreciate all it does for me."

All Roads Lead to Leith

While talking to Sandy over these matters I noticed several players walking into his shop by one door, sign a book, and march out to the first tee by another door. "What's this one way traffic system you have here?" I asked of him. With the canniness of the Scot he told me he had it arranged with his board of directors that all members had to sign their names on a record book every time they played the course and the only way to get into the shop to do so was to enter by one door, march through a lane lined with attractively displayed merchandise on both sides of the alley and make their exit at the opposite end through another door. This, I thought, was a masterful stroke—if it worked. IT DOES WORK at Lake Merced and Sandy Leith, because of that ruling and his attractive personality, plus inviting merchandise, sells a vast amount of merchandise to his members and guests that might otherwise be bought at some downtown store. That showed to me very clearly the sort of merchant Sandy Leith was. It showed him to be on his toes every minute and that his eyes and ears were wide open to every iota of service giving and profit making. I do not mean to infer that Sandy is a mercenary chap when it comes to doing business. Far from it—he is ever ready to give his customer the break instead of grabbing it for himself.

I was much interested in Leith's system of bookkeeping—its simplicity and yet its thoroughness. It is partially made so by the fact that the mailing and the collecting of all his bills is done by the club staff which eliminates all collecting worries from his mind and does away with a lot of books. When a member makes a purchase in Sandy's shop he signs a charge slip in the usual way. At the end of each day's business the original slip is filed away in a visible name folder and

it, rests with the duplicate charges that remain in the book. That book is kept in his shop and never gets out of sight.

Franklin Smith, manager of the Lake Merced club, told me of a clever trick Leith had of adding what I might call super-service to his playing members. The moment a member arrives at the club grounds he is spotted by the caddie master (this is especially so on busy days) from a wee nook in the golf shop and he, in turn, notifies one of the boys in the rear of the shop that Mr. So and So has arrived. That member's set of clubs is at once taken out of the rack and handed to a caddie so that by the time Mr. So and So has changed his clothes and appeared at the shop, his clubs and his caddie await without.

The caddie is handed a caddie pay card, a reproduction of which is shown here for the benefit of those who may be interested. At the bottom of this card there is a space called "Equipment check." This is something new and was thought out by the thorough Mr. Leith himself. In this space is jotted down by the helper who handed the clubs to the caddie the number of wooden clubs, the number of iron clubs along with the exact number of balls contained in the bag. These are carefully checked when the bag is handed back to the helper at the end of play and if anything is short, the caddie has to give an account of the why and the wherefore.

Leith told me this rather elaborate system of checking and double checking has proved very successful and that he has never had a single complaint about missing articles since the day it was installed.

After the member has punched out on the card the amount due the caddie, the lad keeps the upper or punched portion of the check and is handed the amount due him at 3 o'clock the same afternoon or as soon after that time as possible. Under this system the caddie doesn't touch any cash coming to him until handed his wages, a system which minimizes the tipping habit—not approved of by the club officials.

The board of directors of the Lake Merced G. & C. C. are very proud of their lanky professional from Aberdeen and they may take it into their heads to build for him a sales shop worthy of his hire some time in the not far distant future. Sandy Leith is known for his teaching skill and his business propensities more than for his playing ability and, that suits his board of directors to a T.

CADDY PAY CARD No. 10708	
LAKE MERCED GOLF & COUNTRY CLUB	
Player's Name _____	
Please Punch with Pencil No. of Holes Played	
<input type="checkbox"/> .50 - 9	<input type="checkbox"/> 1.50 -27
<input type="checkbox"/> .75 -13	<input type="checkbox"/> 2.00 -36
<input type="checkbox"/> 1.00 -18	<input type="checkbox"/> 2.25 -39
<input type="checkbox"/> 1.25 -21	<input type="checkbox"/> 2.50 -45
Practice Hrs. _____ Min. _____	
Caddy No. _____ Date _____	
FEE _____	
Sign _____	
Do Not Pay Caddy—Pay Caddy Master. To Charge Please Sign.	
CADDY RATES No. 10708	
1 to 3 Holes25	Carrying Two Bags Double Fee
4 to 9 Holes50	Practice 50 cents Hr. Pro Rata
10 to 13 Holes . . .75	<input type="checkbox"/> Double <input type="checkbox"/> Single <input type="checkbox"/> Practice
14 to 18 Holes . . 1.00	Please Punch with Pencil
CADDY RULES	
TRAPS must be raked.	
CADDY whose player is nearest to flag must take same.	
CADDY must not sit on benches at tees.	
CADDY permitted to smoke at caddy station only.	
CADDY must replace all turf.	
CADDY is not permitted to accept pay from player.	
EQUIPMENT CHECK	
Woods _____	Irons _____ Balls _____
Misc. _____	

Lake Merced's caddie card.

safely deposited in a file. Every member has a folder of his own with his or her name boldly written thereon and alphabetically arranged so that Sandy can tell in a moment's notice just how much a certain member may be owing him.

Knows Where He Stands

On the last day of each month he takes all the folders out of the file, totals the amount of each member's indebtedness on an adding machine, pins the adding machine tape to the original charges and sends them to the office of the club for them to do the rest and assume all financial responsibilities. Sandy's check or double check, whichever you care to call