



Casual water in depression may produce scald and other summertime troubles.

afterwards. Should they ever become a little too dry it is hard to get water back into them.

Mixing Soil for New Greens: The topsoil for a new green can be mixed on the green with a roto-tiller, or an agricultural disc. The best procedure is to mix the soil and sand first and then incorporate the peat or other organic material. In practice the soil is spread over the finished subgrade and covered with the proper amount of sand. After they are well mixed the peat is spread and worked in. A good grade of reed or sedge peat should be used. Thorough mixing of thick layers is impossible. The best way is to spread and mix half the amount and then the other half. There is a trick to obtaining a satisfactory mixture with a farm disc. It must pass straight across the green and all turns must be made off the green. Sand or peat pockets develop when the disc turns on the green, or is operated in a circular path.

The other method is to mix soil, sand and peat in the proper proportions and spread the mixture on the green to the desired thickness. Mixing is done with a Royer or a Wichita grinder.

Tight Subsoil Needs Fine Gravel: The soil at hand is used to make the subgrade of elevated greens. It may be heavy in character and rather imperious to water. Working a 3 to 4 inch layer of pebbly fine gravel into the sub-grade before adding top soil will make the subsoil more open and permeable to air and water.

Drainage Within the Soil: A film of capillary water surrounding the soil particles is the reservoir from which grass satisfies its water requirements. Any other water fills the voids between the particles

and occupies space which should contain air. This is gravitational water which should not stay in the soil for any length of time. It should pass down rapidly, and will do so provided the subsoil has the many fine passage ways which are present in a well drained soil.

Tile Drains: A system of tile drains is required when natural drainage is inadequate. The herringbone system of design is the only satisfactory one where tile is badly needed. It resembles a tree in outline. The main tile line represents the trunk of the tree; the laterals correspond to the branches. The main should follow the direction of the general slope, and should bisect the green. The lateral lines should make a 45 degree angle with the main line and should be spaced not more than 10 to 20 feet apart. The trenches should be 18 to 30 inches deep and should be back-filled with pea gravel, or similar coarse material. to within 6 to 8 inches of the surface. A three or four inch tile is large enough for the lateral lines, and the four or six inch size is satisfactory for the main. A good quality of burnt clay tile is generally used. Cement tile is satisfactory in some sections.

Drainage of Greens on Hillsides: The soil underneath greens situated alongside, or at the base, of a hill is often saturated with seepage water. The water comes from the higher ground and flows under pressure. Saturation occurs mostly in spring when the ground everywhere is full of water. It may occur at other times in soggy spots fed by underground springs. The turf becomes thin or it may be killed completely in late winter or early spring. A deep trench located between the hillside and the green is needed to intercept the seepage water which flows under pressure. A line of tile

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CHEMICALS INDISPENSABLE TO INDUSTRY AND AGRICULTURE is placed on the bottom of the trench, and then it is back-filled with gravel right up to the top. This is the secret of success. Without this trap the water flows over the top of the tile and into the green. The gravel conducts the water down to the tile.

Surface Drainage: The important role of surface drainage is overlooked by many. They fail to realize that surface run-off is the quickest way to remove water. A well contoured green with good under drainage never stays wet very long.

A green raised slightly at the center and sloping away on all sides would have the best surface drainage. A course with every green like that would lack character. Yet many greens slope from back to front. The back part dries first and surface run-off from it keeps the front of the green wet long afterwards. Traffic concentrates on the front so it should dry first.

Every green should be shaped so the surface slopes in two or more directions. Sloping in three directions is preferable to two. It will insure more rapid and hence better surface drainage. Localized low spots which hold casual water should be removed whenever they develop as a re-

sult of settling.

The Use of Abrupt Contours is Bad: Some architects in this country have neglected the artistic features of design, have overlooked the necessity for effective surface drainage, and have ignored the effect of topography on maintenance. They studied and copied the features of the sea-

side courses in Scotland.

A golf green should harmonize with the surrounding landscape. It should look like it was carved by nature and not made by man. Severely contoured and heavily trapped greens may fit seaside landscapes. They may be in keeping with the rugged topography of Britain's seacoast and easy to maintain because of its cool moist island climate. Such greens do not blend into the rolling landscape of an inland country, and are hard to keep in America because of the continental type of climate. Summers are

too hot and otherwise unfavorable in some regions, and winters are too severe in other sections.

Abrupt ridges, high knobs, steep slopes and depressed valley-like runways are outmoded on inland courses. These features reduce the amount of cup space on the green. The useful surface may become too small for the turf to survive the bruising effect of concentrated traffic. Yet the wasted area must be poled, cut, fertilized, watered, and treated with chemicals for disease, worm and insect control. Long sweeping contours are just as interesting for play. They simplify and cheapen maintenance.

An abrupt bank around the outside edge of an elevated green increases the cost of maintenance unnecessarily. They must be moved by hand and kept moist in dry weather. Otherwise the outside edge of the putting area will become dry. Then the grass withers and turns brown. Longer slopes which permit mowing with a tractor and three gang unit are better.

Air Drainage: The movement of air across the surface of the green is very beneficial in hot weather. It tends to hold temperatures in check and to prevent dew formation. The grass stays healthier and

disease is less formidable.

A dense growth of trees and underbrush around the sides and back of a green stops air circulation even though the green faces the direction of the prevailing wind. The trees and undergrowth act as a barrier. Summer breezes pass over the top of them and leave a dead spot on the green. This happens to greens located on hills as well as those in valleys.

The underbrush should be removed, and some trees also if necessary, to provide air passage through the barrier. When prevailing winds come from the side an open lane can be cut through the trees to make an air passage-way without detracting from the beauty of the green and its surround-

(To be continued)

Abrupt bank and knob in green cause desiccation (drying) injury during an open winter with little snow covering on the green.





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Twilight Leagues Bring Big Boom in Golf Play

By E. T. KUHN

Pro, IBM, Country Club, Endicott, N.Y.

During my long association with golf, I have seen various promotional ideas initiated to increase play and interest in this popular sport but the opening of our 1946 season saw an impetus given to this ancient game that outshadows anything that I had seen before.

Under the able direction of Jack Bisco, our golf chairman, our members were given entry blanks before our golf season opened. Golf leagues are not a new idea here at IBM CC as we had established these leagues prior to our country's entry into World War 2, but the gradual curtailment on the use of gasoline, tires, etc., eventually necessitated the shelving of our leagues until this Spring.

The response to the revival was very gratifying. Before very long we had 11 leagues established based on handicaps.

Each league was composed of 10 fourmen teams with a total of 440 persons participating. The committee composed of our club champion, John Grandeo; and Messrs. Loftus, Miller, Brumaghin, Bennett, Penrose, Barnes, Laughlin, Beck and Lucas of the day shift and Perry and Transue of the 2nd shift met with Miss Effie Herman representing the business girls and Mrs. Arthur Blake representing the Associate ladies and the ingenious schedule set up by William Bennett was thrashed out and adopted.

Our leagues rotate play over our 27 hole layout playing but 9 holes for each weekly match. Most of our league plays had to be after 5 p.m. so the recommendation was made for 9 hole matches.

Monday thru Thursday are "League

Days" at IBM CC; however, 9 holes of our course are kept open each evening for our non-league golfers.

Schedule Gets 'Em Acquainted

The Bennett and Penrose schedules were so arranged so that no one team met another team in competition more than once during the season. The schedule for a particular date would read as follows:

Intermediate League

Date: June 18

Course: 2nd nine

Partners: No. 1 & No. 3 — No. 2 & No. 4

Teams: No. 6 vs. No. 4

No. 5 vs. No. 10

No. 1 vs. No. 9 No. 2 vs. No. 8 No. 3 vs. No. 7

Referring to our sample schedule we find team No. 6 scheduled to oppose team No. 4, consequently, No. 1 man on team No. 6 meets No. 1 man on team No. 4 and so on down the line.

These men play match play for one point per match which accounts for 4 points of a potential 6 points. Back to the schedule again and we find No. 1 man and No. 3 man are partners as are No. 2 man and No. 4 man. In conjunction with their regular match these partners play their respective opponents a hole by hole match based on the aggregate score of the partnership. These two partnership matches on each team accounts for another point per match which brings our total to six points. The leagues play a schedule over 9 weeks and pay a small amount each week as prize money.

Clubhouse of International Business Machine course where Eddie Kuhn has created great golf interest.



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Photo Courtesy Canterbury Country Club, Cleveland, Ohio

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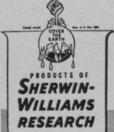
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The Lowe Brothers Co., Dayton * John Lucas & Co., Inc., Philadelphia * The Marlin-Senour Co., Chicago
Ragers Paint Products, Inc., Detroit * The Sherwin-Williams Co., Cleveland



One of the night shift leagues in the active golf schedule at International Business Machine club at Endicott, N. Y.

From the viewpoint of the pro, we have never had anything that has kept our pro shop and golf course as busy as it has been this year. Our play for April and May increased 161% over our figures of the corresponding months of last year. With our heaviest play on Saturday and Sunday, nevertheless, we have had 330 golfers on a

Tuesday and 254 on a Thursday.

We feel that golf leagues are the answer to many pro's problems. We took care of \$2000 merchandise vouchers that represented the prizes for the various leagues. Ours are busy golf shops and we look for bigger things in 1947. Eddie Kuhn will describe his pro shop in March Golfdom.

Service Charge Now 15% - More Get Benefits

By HARRY J. FAWCETT

Genl. Mgr., Kansas City (Mo.) Club

Club officials and managers are concerned at the lapse in the "no tipping" rule which has been in nominal, if not actual, effect in private clubs for years. In looking realistically at the disregard of the rule most managers have conceded that it's the tip income that is a substantial item in securing for a club the type of waiters or waitresses first class operation requires. But that phase of the employee payment problem isn't basic. Something definite as a matter of management policy is required to attract to club work the sort of help essential to efficient operation. The proper basis of pay is a fundamental part of operation. Cheap help can be terribly expensive for a club, while well-paid and satisfied help is more than a means of pleasing members; it's essential to economical operation with

Thirty years ago I believe I established, at the old Chicago Automobile club, the 10% service charge which still generally prevails at city and country clubs. Even then we had difficulty in getting good waiters in competition with hotels and restaurants where tipping was general.

rants where tipping was general.

I soon discovered that the 10% service charge on meal tickets wasn't carrying the idea far enough. Employees at the bar and

elsewhere around the clubhouse also served and were entitled to a bonus for their satisfactory performance. So, several years after that, at the Downtown club of Chicago, and later at the Lake Shore Country club at Glencoe, Ill., I carried out the idea of adding the service fee to other items of house accounts and at Lake Shore gave 8% of the 10% to the waiters and waitresses, with the headwaiter, captains and busboys getting 2%.

I think you will find that most members believe that the 10% service charge is distributed among all house employees in lieu of tips. I know of no club where such a practice is established. Now, in view of the necessity of teamwork all through the house it behooves managers and officials to study such distribution.

Spread the Bonus

Furthermore managers and officials of first class clubs are confronted with the necessity of making club employment more desirable and in such study they'll see the wisdom of spreading the bonus of service charges. Club officials at their shops and offices know what rises there have been in the wages of employees hence must recog-

(Continued on page 60)

types of grass seeds and a line of equipment.

NIAGARA SPRAYER AND CHEMICAL DIVISION, Middleport, N. Y., plans to present its complete line of chemical control materials, including insecticides, fungicides and 2,4-D Weed Killers. Prominently displayed will be Niagara Lead Arsenate and Niatox Crop Spray (50% DDT) as turf grub-proofers; Puraturf for the control of brown patch, copper spot and dollar spot; Puraturf 177, a wettable, organic cadmium fungicide; and Niagara 2,4-D Weed Killer.

ARTHUR D. PETERSON CO., New York City, is centering its exhibits about the Whirlwind Mower, Bolans Sickle-bar mower, and the latest in Jap beetle controls. Peterson's booth is opposite

that of Worthington-Jacobsen Co.

JOHN A. ROEBLING'S SONS CO., Trenton, N.J., is showing a 30" power lawn mower, completely new in design, that cuts and trims at the same time and covers half an acre in just an hour. Cutting with a rotary action produced by horizontal electric-fanlike blades, the mower is streamlined and equipped with an automatic clutch for safety.

O. M. SCOTT & SONS CO., Marysville, Ohio, is offering samples of its 4-X Weed Control which won such acceptance following last year's G.S.A. Turf Conference. Scott is also displaying its Turf Builder and Golf-Park Fertilizer.

SKINNER IRRIGATION CO., Troy, Ohio, expects to show its complete line of modern golf course irrigation equipment, targeting the types installed at West Point, Boys Town, and Ro-

chester, Minn.

SPEEDY MANUFACTURING CO., Sioux Falls, S. Dak., is unwrapping its newly developed "Speedy" Power-Vac Rakeland, the machine which through a vacuum and sweeping arrangement, sucks up leaves into a hammermill which pulverizes them and blows the leaf powder back upon the ground to act as fertilizer.

TORO MANUFACTURING CO., Minneapolis, aims to reveal three new items among its line: Spartan gang mower, with simplified drive and improved cutting ability; the Toro power greensmower, including easily removable reel and drive roller; and Aero Rough Cutting mower of four

blades, no rear roller, and large pneumatic tires.

A Complete List of Exhibitors and Their Booth Numbers follows:

American Agricultural Chem. Co	Nelson Mfg. Co., L. R
Associated Seed Growers, Inc. 10	Niagara Sprayer & Chem. Co
Bean Mfg. Co., John	Perfection Sprinkler Co
Brulin & Co. 25	Peterson & Co., Arthur D
Buckner Mfg. Co. 1-2	Pfizer, Chas., & Co
Chipman Chemical Co	Philadelphia Toro Co
Clapper Co. 43	Roebling's Sons Co., John A
C. B. Dolge Co. 50	Roseman Tractor Mower Co
Dow Chemical Co	Royer Foundry & Machine Co
E. I. DuPont de Nemours Co. 42	Scott & Sons Co., O. M
Fate-Root-Heath Co. 9	Milwaukee Sewerage Comm
Ferti-Soil Co. 5	Sherwin-Williams Co
Friend Mfg. Co	Skinner Irrigation Co
Golf & Lawn Supply Co	Speedy Mfg. Co
Henderson & Co., Peter	Stumpp & Walter Co
Ideal Power Lawn Mower Co	Swift & Co
Jacobsen Mfg. Co	Toro Mfg. Co
Jari Products Co	West Point Lawn Products
Johnson Mower Company 31-32-33-34-35	Worthington Mower Co
MacMullen-Turhune Co	USGA Greens Section
Mallinckrodt Chemical Works	N.YConn. Turf Imp. Assn. 2-E
Metalsalts Corp	N.J. GSA-N.J. Exp. Station
Modern Mfg. Co	War Dept. Chief Engineer

MERVIN HOAG, NELSON MFG. CO. SECRETARY, DIES

In the passing of Mervin A. Hoag, Nov. 25th, golf lost one of its most widely known and popular figures in the course maintenance department of the game. In his 25 years as secretary of the L. R. Nelson Co. of Peoria, Ill., his enthusiastic interest and energy was devoted to the improvement of golf course watering equipment in which the Nelson company became specialists. Mr. Hoag came from a family of pioneers who settled in the Peoria area over a century ago. He was an ardent golfer and a

leader in the many civic and business groups with which he was affiliated. Mr. Hoag is survived by his wife, one daughter, Mrs. Marietta Hoag Schunk, a grandson and three sisters. Burial was at Peoria's Springdale cemetery.

MRS. WINIFRED McKAY, wife of Dave McKay, pro at the Pittsburgh Field Club, died Saturday, December 21st, in West Penn Hospital after an illness of five weeks. McKay is president of the Tri-State PGA.



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(Continued from page 58)

nize that the situation at their clubs is not immune to conditions that compel increases.

The employee security insurance idea has spread widely in industry. That's something the clubs have to meet in trying to get desirable employees. The condition is acute enough in city clubs where there are 12 month jobs but in country clubs with shorter seasons and employees sometimes having their homes rather remote from their place of work the problem of retain-ing good help in good morale is a very pressing one.

At the Kansas City club we have adopted a security insurance plan providing wages to an employee when incapacitated, and providing hospital expenses and death payments. Ours is not the first club to install such a plan but I believe that in financing these payments which are made solely by the club, we have done something that is overdue in club operations.

Hike Service Charge 5%

We have raised the service charge from 10% to 15%. Part of the increase has been distributed to house employees other than the waiters and waitresses. Thus the em-

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ployees in "the back of the house" upon whom so much of the seen satisfactory operation depends finally get a good break. Some of the service charge is distributed in set amounts monthly to the head waiter, captains and busboys. The rest is divided on a pro-rata schedule, considering base pay, among other employees. In recent months the added amount has been about 13% in addition to the regular wages of employees not previously beneficiaries of the bonus distribution. That, in addition to their health, accident, hospital and death policy, has made them appreciate that our club is a pretty good place to work.

The increase of service charge from 10% to 15% has been accepted without complaint by our members. Of course some might hold to the belief that anyone qualified to belong to a good club these days certainly must know that wages and other employee inducements must be raised over those of previous years, but in almost any increase of charges around a club some protest can be expected. Absence of criticism of this service charge increase and the use to which it was put has convinced Kansas City club officials and me that the suggestion of a service charge increase might well be passed along to managers and officials of other clubs, country as well as city.