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There are possibly nearly as many methods of caring for greens as there are golf courses and any of them are good if the desired result is obtained and the membership is pleased. One thing we would like to add is that the game of golf is played before you get to the green and a green should not be a hazard. No green should have a pitch of more than three per cent, for more than this will cause a ball to gather momentum on a well-cut green. There should be undulations to add to the beauty; but we do not feel the greens should be freaks.

Last we discussed tees and as several wanted to test the tees, greens and bunkers of the Mound Builders course this discussion was rather brief.

We believe the tees should be the determining factor in the length and difficulties of a golf course. Tees should, if possible for beauty and minimum of maintenance cost, be large and as nearly as possible conform to the characteristics of the surroundings. One per cent slope on tees from front to back is all that is sufficient for drainage. We have often seen tees made after the box pattern, when by moving them from ten to twenty yards you have an absolutely natural tee available, which would add materially to the beauty of your course, and also simplify your upkeep.

If you want to keep your membership happy, and that is what we are all striving for, go out and smooth the grooves out of the bunkers, put the holes in an easy place on the green, and let them play your 445 yard holes at about 390 and 400, and most all will come in with a low score and if the minor details such as cups, towels, ball washers and the hundred other things around a course have been looked after they will call it a perfect day.

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Mid-West Greenkeepers' Page

BY A. L. BRANDON, Secretary

The Skokie meeting of the Midwest Green-keepers again produced an enthusiastic gathering. Skokie Country Club showed the imprint of the long drouth, as do all other clubs in this district that have not made fairway watering part of their regular maintenance program.

Midwest members who acted as marshals at the Beverly Country Club during the Western Amateur certainly have to admit that its condition was excellent; also that it provides a test of golf. Matt Bezek, Midwest president is the greenkeeper at Beverly.

Cyril Tolley's driving also caused many "Oh's" and "Ah's" from the gallery.

A fact which can't be denied—that regardless of where your local organization meet or how often, the alert greenkeeper can always pick up a point or two.



A Wide-Awake Secretary



Blessed is the organization that has a secretary who is on the job. The Mid-West Greenkeepers have one in A. L. Brandon whose photo we are privileged to publish this month. He is a greenkeeper too and a darn good one so we hear. At his home course, Saint Charles Country Club. he is extremely well liked and the members know that he is working for them early and late. Between times he works for the Mid-West and his page here every month speaks for his energy and initiative. It is indeed a real pleasure to introduce him to our readers around

A. L. BRANDON

Robt. E. Power, Editor

The August meeting will be held at Shore-acres Monday 25. Those of you who plan to play golf, had better tune up a little, for we understand that a little accuracy will be needed. Mr. Alec Binnie (1929, Midwest president) is the greenkeeper.

The annual Midwest greenkeepers tournament will be held in September. The Tournament committee have Chain O' Lakes, Medinah Country Club and Mr. Laskers' Mill Road Farm Course offered to them for this tournament.

The continued drouth seems to be the subject of all conversations—the old-timers telling "back in so and so when Turtle Creek went plumb dry," others blaming the radio and still others contribute the spell to Dick Byrd's trip to the South Pole—anyway it sure tests the calibre of the greenkeeper.

The rainfall here has been about 55 per cent of normal so we have been more fortunate than other regions. Probably the most damaging have been the high abnormal temperature, plus high scorching winds.

Ontario Greenkeepers Hold Show

BY J. H. EVANS Golf Editor, Toronto Globe

September 9 has been selected for the second annual exhibition of golf course equipment under the auspices of the Ontario Green-keepers' association. The date was chosen on account of the Canadian National Exhibition where nationally and internationally known manufacturers exhibit their wares. The exhibition closes on September 6, thus enabling the greenkeepers association to secure a wide range of machinery and equipment for its show which is to be held on the Royal York course.

Announcement of September 9 as the date of the exhibition resulted in a response from manufacturers which exceeded the expectations of President W. J. Sansom of the association. He had found it difficult to interest them in the first exhibition and its worth as a medium through which club presidents and officers of Green committees could be interested in equipment. Pennsylvania; Toro; Crane, Ltd.; Jacobsson; Worthington; Rice, Lewis; Taylor, Forbes; Aikenhead; Golf, Ltd. are some of the firm's who have promised to support the exhibition.

In addition to their practical support, the firm's supporting the exhibition have taken space in a program being issued by the Green-keepers' association. Through the program, the association will be able to convey a message to the course superintendent and green-keeper on the several hundred eighteen and nine-hole courses in the Dominion. The message, setting forth the appeal of the association for support is to be written by Mr. Sansom and from every other angle the exhibition will be used for the purpose of propaganda.

For the first time there will be a meeting of Ontario and Quebec greenkeepers when the exhibition is held. Efforts have been made without success to promote a gathering of this description. Quebec has worked through a cooperative association with buying as an important feature of its activities and with a salaried official to visit clubs when the green-keeper required assistance, while Ontario's activities have been educational with meetings in the summer months conducted as a forum and continued throughout the winter with the assistance of lecturers from Federal and Provincial governments.

Four representative greenkeepers from Quebec are to attend the exhibition. Their coworkers in Ontario plan to take advantage of their presence to discuss the advantages of bigger and more representative organization.

While the Master of the National Grange



in the United States discusses the effects of the drought and the farm leader in Canada seeks for relief from the pending calamity, the course superintendent in eastern Canada has no problem of any proportion on its hands yet, nor does he expect any as the days shorten and the days and nights become decidedly cool. Some showers which are bound to appear will relieve him of his responsibilities.

The Toronto Golf club has been chosen for the triangular championship of the British, United States and Canadian seniors' associations. The putting surface is perfect, but the fairway has been burned in spots. Mr. Sansom has assured the club that the course has suffered no damage and will be in shape for tender-footed seniors who played their championship on it two years ago and came back to it on account of its delightful turf.

"I doubt if there has been any serious dam-

age suffered by clubs in Ontario, while there is no indication of such in Quebec," said Mr. Sansom. "This is in spite of the fact that we haven't had any rainfall of consequence since May 14. I doubt if I can recall a season with as little rainfall and with as little real loss. Last year the drought came in August, extended into September and October and before the courses could be well soaked with early snows and rains, a severe winter commenced, precipitating problems sufficient to make all of us hustle this spring."

Mr. Sansom stated that greenkeepers who attended the monthly meeting of the association at the Oshawa Golf club were amazed to find fairways and putting surface of bent grass unaffected by dry weather. The meeting after a comparison of notes on conditions elsewhere came to the conclusion that clubs had been extremely fortunate and would escape without trouble provided fall and early winter was normal.

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New England Notes

BY LLEWELLYN L. DERBY

Although at this stage of the season the aridity is still at least one standing jump behind last summer's record drouth, the fact remains that New England courses continue to be parched and dry and the arrival of moisture continues to be postponed.

Springfield, Mass. folks are still hopeful of easing the pressure on their one municipal course, Franconia, by adding another. Just now, however, the proposition has landed very much in the "rough" and it will take some skillful stroking to reach the "green."

This is the how of it. As we mentioned last month. Nathan D. Bill, who was largely responsible for Franconia, secured an option on a 120-acre tract with a purchase price of \$60,000 and started things off with a \$10,000 contribution. Since that time several other amounts have been pledged but still the total was far away and the option due to lapse soon.

At this juncture Mayor Winter in conference with the War Memorial Committee proposed that \$83,000 which is available as a war memorial fund be used to put through a memorial field and a golf course on the proposed tract.

Right here, though, is where the fur begins to fly. The proposal was put before the American Legion and unanimously indorsed as a means whereby the memorial funds might be used for a purpose beneficial to the community at large. But this is by no means the use to which the funds should be put, according to the Veterans of Foreign Wars. They feel that a memorial building is more appropriate, feel that the majority of veterans feel the same way, and will conduct a straw vote of the 10,000 or more Springfield veterans to see which way the wind blows on the question. So, for the time being this Western Massachusetts city will have but one municipal course.

Due to a change in program the Greenkeepers Club of New England held their monthly meeting on the fourth at the Agawam Hunt Club. East Providence. R. I. instead of at Worcester as planned. Members of the recently organized Rhode Island club sat in for a very pleasant meeting.

John A. F. Graham, 69, greenkeeper of the Needham (Mass.) Golf Club, collapsed of heart trouble on the eighth green of this course he loved so well and died before he could be taken to a hospital. Well known and admired by hundreds of golfers, he had often expressed the wish to President George M. Pond of the Needham club that he would die on the course. He made the Needham course his life work and as President Pond stated, practically built the layout as it now is.

Just Out~

BY LAWRENCE S. DICKINSON

Ass't. Professor of Horticulture Massachusetts Agricultural College

Defines and describes the Culture of Turf in Park, Golfing and Home areas.

CONTENTS

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The National Greenkeeper

405 Caxton Bldg.

Cleveland, Ohio

Greenkeeper George J. Rommell of the Charles River Country Club is beginning to think that there will be no divots to worry about on the fourth hole, at least when a certain miss is playing his course. Not long ago on two successive days Miss Eleanor La Bonte stepped up to the fourth tee and following a beautiful iron shot watched the ball trickle into the cup 153 yards away.

And speaking of divots, I wonder what percentage of those that are replaced ever catch on and live. Not too many, I guess. I suppose it would be revolutionary and radical and all that not to insist that our good friends put them back from whence they came, just for the morals of the thing, but it is interesting to pick up some of these dried clods and see how hard the grass is trying to grow in spite of them. Perhaps it is technique that is needed to make Nature's patchwork quilt look like new again, and sad to relate, perhaps our ardent friends are not more skilled in such matters than in the game they are going to such 'depths' to master.

James J. Ferme, greenkeeper at the Myopia Hunt Club, finds that some players replace divots, or see that their caddies do it, in a very conscientious manner, while others do it perfunctorily and others neglect it completely. During weather which is as hot and dry as at present, the divot's chances of recovery are slim indeed. He feels, therefore, that the best way to heal divot marks is to fill them up with prepared soil and seed.

He takes about a yard of screened loam and mixes with it about 50 pounds of grass seed to suit the soil. A handful of this mixture is dropped into every divot mark noticed and pressed down with the foot. The most satisfactory way seems to be to send out two men with a cart up the center of the course with the men working away from it, one on either side. Carrying a quantity of soil in a bucket, they will cover a few fairways a day and it is incredible how quickly and thoroughly these scars can be healed if the work is done systematically.

A Book for the Golfing Millions who find themselves becoming golf bugs

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EDITED BY

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Vame

Address

A considerable amount of grass webworm really necessary to play "peewee" golf. has made its appearance on courses in the Boston district.

With Tom Thumb courses springing into existence on almost every unoccupied corner lot and gas station, it is getting to the point where the man at the gas pump had best watch out lest he knock the elbow of some high-strung putter as he grinds out five gallons. There is a place for these small imitations of the real thing, and so far as the writer knows, there are none there.

Just the other day the story came out that golf had invaded the precincts of the New Hampshire State Prison at Concord. There is a demand for second hand clubs, both right and left and Warden Charles B. Clarke feels that the game is helpful and of good influence on his boarders. Here is a place where "out of bounds" means something, where it is

The judiciary seem to feel that this abbreviated version of the game is not really golf. In ruling that a miniature course proposed for a White Plains, N. Y. residential district didn't come under the provision of the zoning laws which permitted a golf course in the section, Supreme Court Justice Witschief didn't say what it was but he said it wasn't golf that is being played on these miniature courses.

And out in Chicago Judge John H. Lyle says it isn't golf but it's disorderly conductplaying on miniature golf courses in the early hours of the morning. The fine is \$200 and costs for a misdemeanor of this kind when the neighbors are trying to sleep.

But we have had the 18-day diet, sun tan, and now Tom Thumb golf. Next!



THE 15th TEE AT PINE VALLEY, CLEMENTON, N. J. This is a three-shot hole and every shot must be hit on the nose Photo by H. Armstrong Roberts, Phila.

Soils and Sub-Soils

BY BILL LINDSAY, Greenkeeper Manchester (N. H.) Country Club

PRESENT day greenkeepers are expected to produce a healthy growth of grass to withstand the ravages of golfer's footwear throughout the year.

In many cases the soil on golf courses is of a heavy clayey nature more suitable for producing bricks than for getting a first class turf on it. In other cases it consists of a pure sandy loam that will not retain either fertilizer or moisture in any shape or form. Between these two extremes we find golf courses laid out in peat, gravel, chalk and loam.

Now a greenkeeper, to be successful, must have a working knowledge of these soils; in a word he must have an elementary idea of the origin, composition and general classifications of soils; in short, a slight understanding of Geology. Let me explain here.

Now, the actual surface of the earth as we see it to-day in the cultivated parts of the country consists of mold or vegetable soil; in other parts we see large tracts of barren rocks which vary in character, some are brimstone, sandstone, granite, slate, etc. The most common must have originally been formed by and with water, others have been formed by fire. Now bearing these simple facts in mind it is well to remember that rocks are the mineral constituents of the earth, beneath any mold or soil that may have accumulated upon them and that the most of the soils that we find in our golf courses are originally derived from rocks and many of these important properties of the soil can be traced to the rocks beneath them.

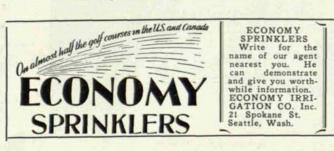
It is well known from the best authorities that every kind of vegetable soil was once rock which by the repeated action of heat. cold, air, and water has been broken down to a fine state of dust, mud or sand. This process is known as weathering. But vegetation has a good deal to do with this also, for doubtless you have noticed small lichens growing on the face of rocks exposed on the cliff or quarry.

We wonder how any plant can live in such a position, but the secret of it is that the lichens draw a good deal of the nourishment necessary for their existence from the atmosphere. Now all this is weathering and goes to illustrate how soils are formed.

Having said so much with regard to the origin of soils I want next to bring your attention to the distinction between sub-soils and top soils. This is easy to detect; the top soil acquires its richness in humus mainly from the decaying of deeper roots, also to the work of earthworms. Top soils are generally rich in humus and the elements of plant life.

Fortunate indeed is the greenkeeper whose course is laid out on loam, the richest soil and well supplied with humus and the other elements of plant foods. These soils are usually deep and not compact, thus admitting of the percolation of water, consequently very little drainage is necessary. At the same time they retain moisture during the summer months and do not dry up too rapidly.

The first necessity for a good soil on a golf green I consider to be one that will hold moisture and the second, one that has power to suck up water from lower levels by capillary attraction. Of the requirements sand has the least water retaining or absorbent power, clay has four times and humus six times the capacity of sand to hold moisture. When water





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drains away from loam or clay the drainage is never complete for these soils after being watered retain some little moisture, but on very sandy soil you lose even that little amount of moisture.

The moral of this is to change that soil. either by fertilizer or top dressings of good loam. With regards to great cohesion. I am convinced that this is sometimes brought about by over rolling with a heavy roller in some shape or form, thus causing bad drainage, sourness and coldness.

I think that you will readily agree that the ideal soil for producing a suitable turf for golfing purposes the whole year through. having due regard to climatic conditions during the year, is a medium loam. For such a soil is fine grained in texture and has the power to lift water easily by capillary attraction during dry summers, at the same time is sufficiently open for air to enter freely and water to percolate during wet weather, and in such a soil you do not get the bad faults of clavey or sandy soil.

There are three things which are absolutely essential for the growth of good grass, 1st, humus; 2nd, warmth; 3rd, moisture. To sum up in a few simple words it means you must have nitrogen in your dressing which must change into nitrate before it is available for the roots of the grass plants.

Lastly, I'll conclude that these are my own simple convictions in regard to soils and foundations for a good course and greens.

California Gossip

By ARTHUR LANGTON

Royal Palms Golf club has been bought by the county of Los Angeles. This course, which is located on the cliffs near San Pedro, Los Angeles Harbor, and the immediate surroundings will be turned into a public golf course, bathing beach, and recreation park.

Midwick Country Club in preparation for the 1932 Olympic Games which will be held in Los Angeles

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has built a new polo field to accommodate the international competitors. This club also has built three new greens and three new fairways.

Old San Gabriel Country Club is in the process of completing seventeen modern greens. The work, which was started on May 30 under the supervision of William P. Bell, has been put through in record

Death Valley golf course, all grass, and located in the lowest and hottest point in the United States, is being made ready for the tourist season which starts in November. In spite of the heat and the arid environment, the surrounding mountains supply enough water to irrigate the course every day. The fairways are of Bermuda grass and the greens and tees are of Pacey rye. During the summer months the thermometer hovers around 130 degrees in the shade.

Flintridge Country club in Pasadena is about to construct a new number 4 hole on its championship course.

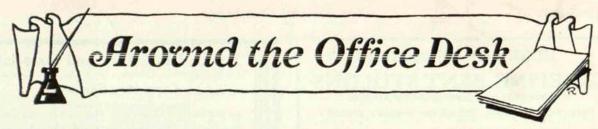
C. M. Cavanaugh, greenkeeper of the Los Angeles Country club recently has returned from the Hawaiian Islands where he made an extensive survey of turf production and maintenance conditions in that territory.

The Greenkeepers' Association of Southern California in conjunction with the Southern California Golf Association, is arranging for the construction of a greenkeepers' experimental station on the grounds of the Brentwood Golf club at Santa Monica. Under present plans, greenkeepers will take complete charge of the station and will attempt to solve some of the unique problems which vex them on the Pacific Coast.



The Fate-Root-Heath Co.





TOURNAMENT SCHEDULE

SEPTEMBER

22-27 National Amateur Championship, Merion Cricket Club, Haverford, Philadelphia, Pa.

30-October 1 Arcola Senior Championship, Arcola Country Club, Arcola, N. J.

OCTOBER

13-18 Women's National Championship, Los Angeles Country Club, Los Angeles, Calif.

Why I Use Humus

By FRED A. BURKHARDT, Greenkeeper Westwood Country Club, Cleveland

I use humus for soil texture, having greens built on Ohio's famous yellow clay, I needed something to break up the soil and give the grass roots a chance. By using one part sand, one part humus, and one part sandy loam I have been able to develop a light soil out of a heavy one.

Humus can also be used in sandy soils for holding plant food. Like a sponge it will hold the soil water and your soluble fertilizer will also be held in the solution.

After you have your soil in condition and get a good stand of grass, you will find you won't have to keep your greens wet with water to hold a pitched ball.

No Water

"Just to think." says Harry Burkhardt, Manakiki greenkeeper, "that three quarters of the earth surface is covered with water and we have been out of water as far as our course is concerned for over three weeks.

"By running a tank wagon to a river a mile and a quarter away, then hauling the water to the course, we spray it onto the greens with a Hardie Sprayer. We carry 400 gallons of water to a load and three loads to a green getting over all the greens at least once a week, in this way we have been able to keep a little life in the grass."

Mr. Nierman, chairman of the Green committee made a spiker in his shop out of 3/8th bolts and by penetrating the hard surface we have been able to get water down to the roots.

Correction

An error occurred in the August issue of the National Greenkeeper, in the article written by John Quaill under the title, "Visiting Toronto Courses."

In mentioning the visit to the Scarboro Golf & Country Club, it was stated that J. T. Anderson was the greenkeeper. As a matter of fact Mr. Alex Mc-Callum is and always has been the greenkeeper at Scarboro and is entirely responsible for the wonderful condition of the Scarboro course.

We are very pleased to make this correction and assure Mr. McCallum that the error was entirely unintentional.

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FRED A. BURKHARDT Chairman, Show Committee 405 Caxton Bldg., Cleveland, Ohio