Brae Burn-Hole by Hole

Scene of the 1928 National Amateur championship

By CARL B. CLANCY

FAMOUS old Brae Burn, scene of the National Women's Championship in 1906, the National Open in 1919, and many State championships, is this year the battle ground of the National Amateur Championship. It is as severe a test of golf as could be found any-

where in the United States. The length of the course is 6604 yards, Par 74, and the lay-out is such that this year's winner will have well-proved his right to the title.

On driving from the first tee the player finds an excellent warming-up hole of 337 yards. A good shot from the tee, which is on a little hill will land in a position where the green can easily be seen, mounds surround the green and thirty yards short of it is a brook.

Number 2—304 yards, requires the placing of the drive over a high hill in order to land in a good position for the pitch to the double level green which is well trapped on the sides and the rear. In front there are two openings on either side of a deep bunker.

A sliced drive means a bad lie in traps or stiff rough.

JOHN SHANAHAN Brae Burn's veteran greenkeeper

Number 3 which is 375 yards long has an uphill fairway for about 275 yards and then a deep valley in front of the green which is open in front for a run-up shot, but trapped on the sides and raised slightly in the rear.

The next hole is one where the scores will begin to run high for the less accurate players. With a gully to carry on the drive, traps on the left and out of bounds on the right, one must be straight down the middle. There are deep traps and high mounds to carry on the second shot and the approach shot is equally difficult with traps surrounding the green. The distance is 446 yards.

There will be few "Birdies" scored on the fifth during the coming championship and a par 5 will be well earned. 577 yards long, with a wide gully in front of the green and traps around the sides and rear, make it the hardest hole on the course.

Number 6 gives a brief respite from



Brae Burn's No. 12-163 yard uphill shot. There's trouble aplenty here

the hard hitting. It is a 150 yard hole, the tee of which is 75 feet higher than the green. The front edge of the green is bordered by a brook so that the tee shot falling short will be likely to add a couple of extra strokes to the score.

The same brook that will catch the careless player on Number 6 will also catch him on Number 7 where it crosses the fairway, flowing nearer to the tee on the right. After crossing the brook the fairway is uphill to the green which is open in front so that the good player should have little trouble getting on in two shots. The distance is 412 yards.

Number 8 is a 227 yard hole over a deep ravine with sides that are very steep. There is very little chance for recovery if one should half top his tee shot.

Number 9 is a drive over a ridge to the foot of a hill and then a mashie-niblick to the green on top, which is 299 yards from the tee. A very shallow trap runs the length of the green in the rear. Beyond the trap, being out of bounds, a shot a trifle strong will probably mean a penalty. The outgoing nine is 3127 yards with a par of 35.

Number 10 hole is 491 yards and has a long rolling fairway with mounds and heavy rough on the sides. The green must be pitched to in most cases on the third shot as few players will make the green in two shots. A new tee on Number 11 increases the yardage by 20 yards making this hole 463 yards long. The drive is slightly downhill with out of bounds to a hook and trees on the right to penalize a slice. The left side of the green is open for the long hitter while the right side has a deep trap and mounds in front.

The 12th is a 163 yard hole and unless the tee shot lands on the green the player is certainly in trouble, for two huge traps cover the entire front of the green which is large enough to easily take three putts.

The fairway on the 470 yard Number 13 is very close to the railroad tracks and a very slight hook will carry the ball out of bounds. 100 yards short of the green is a ditch to catch a poor second shot, but a good one will reach and hold the green which has a distinct rise towards the rear.

Number 14—556 yards long according to the card, is the second hardest hole of the course. The fairway is uphill and undulating, and the green is practically unattainable in less than three strokes. The entrance being only from forty to fifty feet wide calls for great accuracy. Surrounding the green are banks about ten feet high, having on top heavy rough and sand traps.

Number 15 is a short two-shotter of 311 yards. The fairway is uphill and the green can be seen for the second shot, but the distance must be judged accurately



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E. G. STAUDE MAK-A-TRACTOR CO. 2630 University Ave. St. Paul, Minn.



GALLERY FOLLOWING CHICK EVANS AT THE BRAE BURN COUNTRY CLUB This famous course at West Newton, Mass., will be the scene of the National Amateur Championship, Sept. 10-15. John Shanahan, veteran greenkeeper, is getting it ready for the big test

Photo by Edwin Levick

or the player will come to grief in the deep bunker in front or in the rough in the rear.

Although only 370 yards long, a par 4 will be well earned on Number 16. The fairway is on a side hill and a tremendous uphill drive is required to land on a level spot. The green is open in front, but in the rear ample trouble exists in the form of thick rough and a steep bank.

Number 17 is a 255 yard hole with the fairway downhill all the way. The green is raised in the rear and trapped on both sides.

On Number 18—437 yards long, there can be no slowing down in the heavy pace set by the other seventeen holes. The first 175 yards is but a narrow aisle through the trees with a carry of 210 yards to clear a brook which has a high mound running along the further bank. The second shot is a long uphill one to the large green which is raised in the rear. Distance in—3516 yards; par 37.

The greenkeeper, John Shanahan who has been with the club twenty-seven years has put the course in good shape for many championships. He has twenty-six men working forty-five hours per week for the ordinary maintenance of the twenty-seven holes.

For mowing the fairways he has three 5-unit fairway mowers hauled by three tractors, two light and one heavy.

The greens at Brae-Burn are of South German mixed Bent and a nursery of fourteen hundred square feet supplies the turf.

Mr. Shanahan combats brown patch by watering the greens early in the morning and he believes that he secures as good results by this treatment as by any other.



How I Control Brown Patch

Second of series of prize winning stories by expert greenkeepers. These are considered the most comprehensive articles on the subject ever published

JOHN PRESSLER

Allegheny Country Club, Sewickley, Penna.

ROWN-PATCH is caused by using too much B fertilizer, too much topdressing, too much watering and if you won't correct this or rather these three things you will have brown-patch.

July and August are two bad months to topdress. I have grass tennis courts that have not been topdressed for twenty-five years and are just as good as any of my greens.

What is the use of using chemicals when you get brown-patch just the same. Chemicals will not stop brown-patch if you don't correct the first three reasons.

Visit some poor nine-hole golf course where they have no money to waste on topdressing, fertilizer, and watering and you will see that you never find brown-patch.

Here is something to think about.

Now how to keep your greens in first-class condition.

For twenty-five years I used 100 pounds bone meal to each green in March, that was all the fertilizer all year, no topdressing, and the only fault I found with this system was too much crabgrass.

In 1926 I started to use 6 pounds sulphate of ammonia to each green from the first of March to the last of October per week, no bone meal or topdressing with this system. My crabgrass, chick weed all disappeared.

My greens are in first-class condition, never take grass clippings of greens-that is why I don't topdress. Always topdress a new green the first year.

E. A. SWANLUND

Rochester Country Club, Rochester, Minn.

N VIEW of the fact that there are posters and a reward out for Mr. Brown-Patch, we'll all have to go after him most energetically, using all the vim and vigor that is in us.

For the past three years I have worked on one method in combating this enemy and have succeeded to such an extent that he has not visited my premises, for which I am not the least indignant. This might have been luck but, nevertheless, my intentions are the same this season to ward off the hated pest, Mr. Brown-Patch, and I would like to see someone else try this.

From the first of April each year I topdress every three or four weeks with compost and sulphate ammonia. My first topdressing in the spring is rather heavy, using from one and one-half to three yards per green of compost and twenty to forty pounds of sulphate ammonia. After this I cut this amount in half and do likewise with all following topdressings. The above mixture is rubbed into the roots of the grass, after which the grass is

watered. There is no danger of burning if mixed and well-washed.

Our brown-patch season being from the middle of June until the first of September, I use sulphate of ammonia in liquid solution between each topdressing. For spraying, Charles Erickson's sprayer is used. This sprayer is very easily manipulated and a good job is the result. Spraying is done in the evening after the sun is down and two men can easily do nine greens in a few hours. As a result of this, the greens are in perfect condition and this gives them food on which to live and from which to resist all abuse and disease. I do not believe in using chemicals. The less used, the better, is my policy. Treat the greens as you would treat yourself, with plenty of good wholesome food and water.

CHAS. KESSELRING

Washington Country Club, Marietta, O.

N FACT it won't take a long story to give my experience with brown-patch. I have been assistant greenkeeper at the club I am now at for three years, and



What A User Says:

MacGregor Compost Distributor Co., Wheaton, Illincis, Gentlemen:

Gentlemen: Two years ago I had the pleasure of visiting the Chicago Golf Club, Wheaton, III., and I was deeply impressed with the methods used in getting the soils for top-dressing worked into the turf, by the use of a compost brush. Having used several devices for working the compost into the turf, which have not given me good results, I tried out the MacGregor brushes, and I feel, owing to the good re-sults which I have received from them, I should acknowledge my appreciation to you for the service that the two brushes which we received from you have given. Yours truly (Signed) John Morley, Greenkeeper,

Yours truly, (Signed) John Morley, Greenkeeper, Youngstown Country Club, Youngstown, Ohio

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A Water Hose with Corrugated Smooth Covernew corrugation so constructed that it will not rough up the Greens and still reduces kinking to a minimum.

This hose has a cover of extra thickness, two plies of cord and heavy tube. Plies will not separate. On 1-inch sizes and over, we use extra long shank couplings which prevent blowing out.

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We ship "ELECTRIC" Worm Eradicator in 5, 10, 15 and 50gailon containers. Each gallon makes 250 gallons of solution, enough to treat 3,000 sq. ft. Price, \$3 per gal, f. o. b. factory. Measure and glass jugs for handling included free. With orders for 10 gallons or more, we supply the Sprinkling Cart, shown above, at cost price, \$35.00.

Reade Manufacturing Company



Say you saw the ad in The National Greenkeeper

our "pro" was greenkeeper, so therefore the greenkeeping work fell to me.

The second year we had what is called the large brown-patch, but not to any great extent. Five of my greens which are of the Washington bent were affected, but two applications of Pryex was all the treatment required to stop it, and then last year on four of our greens we had the dollar patch, and this I treated with Calogreen, and two applications was all we needed for that.

Since that time I have had no more trouble with either kind, therefore, I am not prepared to give much light on that subject. But I am making a thorough study of what my brother greenkeepers are writing on this subject, as I presume that at some future time possibly some near future I may be greenkeeper at some club that is not so fortunate as the club I am now with along that line.

LAWRENCE HUBER

Elks Country Club, Worthington, Ohio

I DON'T know in your question, (How I control brown-patch) whether you mean entirely or part of it. I have read where several greenkeepers claim not to have any trouble by using the different mercury compounds, but I have tried several of them and still have brown-patch in the large form.

My best method of control either in the large or small brown-patch is to topdress the greens affected as soon as you find any trace of the disease, with compost and fifteen to twenty pounds of sulphate of ammonia added to the top dressing and water as well. In a few days all traces disappear.

In severe cases where I have spots that are slow in recovering I go to the nursery and get plugs and cut out these spots and plug new sod in. I have different size hole cutters for this work.

One of the things that also helps to control brownpatch is early morning watering. I noticed this especially on greens that were watered by our night man in the morning hours. However, it is hard to have them all watered at the same time. Last season I used Calomel regularly in each topdressing once a month and I noticed we had less brown-patch than ever before, although we had some, but it was less severe.

I think this a very interesting question and I hope to read other greenkeepers' answers in the NATIONAL GREENKEEPER.

WM. MCMILLAN

Harrison Hills Country Club, Attica, Ind.

M INE is a nine-hole course and my greens were infected with small brown-patch last year. I was unfortunate in not having on hand some of the recognized disinfectants for the control of this disease, but the following method I'm sure proved beneficial.

The dark ring around the patches showed the fungus very active. I first cut my greens close and catching the clippings and all the infected blades of grass I could. I then applied ammonia sulphate in its own powdered form not in topdressing at the rate of three pounds to one thousand feet and watered in and I was really convinced this checked the disease to a large extent. In the meantime I sent for a supply of Calogreen, but it was two (2) days later before I applied this and I couldn't notice then where the disease had spread very much. I then applied Calogreen in solution at the rate of onefifth pound to one thousand feet and the disease disappeared in a few days and the greens were back in a healthy state again.

Knowing the fungus is a disease affecting the blades of grass mostly, nevertheless I noticed a decided check after applying the sulphate of ammonia as a stimulant when the turf in that state was very beneficial.

The one application of Calogreen was sufficient to remedy a cure in my case as we had been having a dry spell at the time. After treating all my greens the same way I topdressed and came out all right and healthy if this is of any interest.

JAMES A. SMITH

London Country Club, London, O.

F OR several years I have been greatly interested in the prevention of brown-patch rather than in its control after appearance.

I have watched carefully over a period of five years the development of more than five million square feet of good, finished bent and invariably found that when at least a five inch rootage existed due to good physical soil conditions, brown-patch had never affected the planting. Where there has been immunity, deep rootage had so nourished the turf that its healthy and rapid growth could not be seriously impaired by this fungi.

Practically all brown-patch I have examined has been found upon shallow rooted turf, in comparatively poor soil and the soil of such a texture that the easy passage of water and air to a depth of five inches was impossible.

If this is true, the solution is one of better greens construction in the top five inches. We must remember that bent grass requires at all times abundant moisture to the depth of its rootage. All feedings used by turf must pass through this rootage as it takes up moisture, and its depth and the presence of proper bacteria surrounding it decide the character of the turf development. Artificial nourishment may stimulate momentarily its growth. but there is invariably a reaction effecting the bacterial life in the soil and a tendency to shallow rootage because of surface feedings.

Healthy and immune "Washington Strain" bent should have a rootage of from eight to ten inches and natural feedings from the soil bacteria sufficient to make the use of ammonium sulphate or other artificial feedings unnecessary. Their need as feedings is largely due to impaired aerobic bacteria which have been denied sufficient air and moisture. The greater the turf weakness, the more likely that brown-patch will get a foothold. This fungi does not thrive where healthy conditions of turf oppose it.

A tendency to turf coarseness from an excess of natural feedings can be corrected by the character of top dressings used.

Improperly nourished turf like improperly nourished children are liable to disease because of lowered vitality.

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The National Association of Greenkeepers of America has recently become a corporation. We have been incorporated under the laws of the State of Delaware whereby we are permitted to do business or have an office in any state in the Union. It is quite a big step so lets get together and boost the Association.

The Greenkeepers of Minnesota are to be congratulated upon their recent organization. With Charles Erickson as president they are sure to do a lot of good in the district and will also give the National Association a good hold in that territory. The other officers are: Leo J. Feser, Vice President, Erich W. Pahl, Secretary, and F. G. Anderson, Treasurer. Pull for the Minnesota boys and wish them success in their new undertaking.

J. O. Campbell of Hartford, Connecticut, is keeping his eyes open. He has only visited two clubs since he is located in the East and he sent in application blanks for both greenkeepers of these clubs.

The Sea Island company of Brunswick, Georgia, writes in and tells how well satisfied they are with the services of Hugh C. Moore whom they secured through the Association. We are glad to hear Mr. Moore is making good.

Have you paid your 1928 dues? If not why not? Send them to the Secretary now while it is fresh in your memory.

Be sure to notify the secretary of any change in your address.

Every member get a member and make it a thousand by next February when we meet in Buffalo.

The Show Committee headed by that very capable man, Fred Burkhardt, has started in to get ready for the Golf Show next year. Good luck Fred, and may success crown your efforts.

Three good reasons why you belong to the Association: Knowledge, Fellowship and Advancement. Boost the Association and enjoy the benefits of all three.

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Say you saw the ad in The National Greenkeeper

GREENKEEPER'S ALMANAC AUGUST

By JOHN MACGREGOR Chicago Golf Club

This is a hard month on greens. The temperature is usually favorable for "Brown Patch." Have you remedies on hand? Treat your greens before the disease hits you, "an ounce of prevention is better than a pound of cure."

Grass wants to rest this month. Be careful how you treat it.

"Poa Annua" is a rank feeder. When it does not receive sufficient nourishment, it has an unhealthy color.

Cut the greens close every day as usual. Do not raise the mowers for the summer, as a heavy green is a real hot-bed for "Brown Patch."

Another light top-dressing will materially help the grass.

Fight the crab grass. On fairways where there is no bent, one spraying with iron sulphate will eradicate it.

New seeding of greens and fairways should be started soon after the 20th to insure a good root system with which to carry through the winter.

The tees demand the usual care.

Fairway watering is usually necessary this month where watering systems are in use. Treat the fairways with Arsenate of Lead for the grubs.

Keep the rough cut and the bunkers trimmed.

Attend the Greenkeepers meetings. If you are not a member you will be before you leave the first one. These meetings are instructive and educational.

Every member get a new member for the N. A. G. A.

Have you paid your dues? "Dinna forget."

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The Soil Profile

Characteristics of soil and their relation to drainage design as discussed by one of America's recognized experts

By George M. McClure Soils Department, Obio State University

I^F ONE examines a freshly exposed vertical column of soil there are found various layers or horizons differing in their depth, thickness, color, texture, reaction and in other characteristics. This entire series of horizons is collectively known as the "Soil profile."

Soils show marked differences in the character of the horizons which make up their profiles. These differences are the result of different conditions of climate, of topography and of drainage during the formation of the soil from its parent material.

Consider the case of a soil adjacent to a stream subject to annual overflow; it receives yearly deposits of soil material dropped from the flood water. Before this deposited material has opportunity to undergo much change a fresh deposition is made. This continues from year to year. A soil formed under such conditions will show little variation from the surface downward. It may be almost entirely uniform to a depth of three feet or more.

In marked contrast is the soil on the upland far removed from any possible deposition by flood water. It has been in place for possibly thousands of years. Through all this long period of time it has been undergoing slow changes. The soil-forming processes have Leen continually remodeling it. Finally there results a soil in which there is a marked gradation in physical and chemical characteristics from the surface downward. A definite soil profile is developed in which there are several distinct layers of horizons differing in many ways, especially in thickness, textures and color, and often in reaction.

Upland Soils are Stratified

UPLAND soils of the humid regions generally tend to be somewhat stratified as to texture or size of particles. Their upper or surface horizons usually contain a greater proportion of larger particles than do the lower or sub-surface horizons. The process of leaching, especially in old soils, has tended to move the finer particles downward with the consequent formation of layers made up for the most part of very fine soil particles. Such layers offer considerable resistance to the flow of water through them. The opposite condition of sandy or gravelly layers in the subsoil, with consequent ease of water movement, is sometimes found.

It is seldom the case that the character of the surface soil furnishes a reliable clew to the kind of subsoil underneath. The drainage engineer is not so much con-

cerned with the properties of the surface horizons as he is with those of the subsurface. It is particularly important to him to know whether or not any of the horizons of the subsoil are only slowly permeable to water. If they are, he desires to know the exact location of these impervious horizons with respect to their distance below the surface.

He also needs a clear picture of the nature and texture of the soil material in these impervious horizons in order to know how to proceed to overcome this condition, A lack of knowledge of these two points might result in so placing lines of tile in the sub-soil as to render them ineffective.

How Soil Texture is Defined

A DETERMINATION of the percentages of the various sized particles which constitute a soil defines its texture. Soil particles vary in size from mere specks, invisible with the most powerful microscope, to those which are large enough to be seen with the unaided eye. The physical properties of any soil horizon are determined largely by the size, arrangement and relative proportion of these different sized particles in it. Of particular interest to the drainage engineer is the amount of extremely fine or "colloidal" material present. He is especially interested in this because of its marked effect on the total surface area of the soil particles which in turn effects the movement of water through the soil.

As the number of fine particles in a given weight of soil is increased the combined surface area increases also, but not in the same proportion. If the size of particles is decreased to one tenth the previous size, the total number present in a given weight of soil is increased one thousand times. At the same time their total surface area is ten times as great. It is this latter which is of most significance from the drainage standpoint.

If all the particles contained in an acre of soil to plow depth had diameters of one-twenty-fifth of an inch the total internal surface area in the acre would be less than five hundred acres. On the other hand if the particles all had diameters of one-ten thousandth of this amount the total internal surface area in the acre would be five million acres. In this latter case the particles would tend to stick together with a consequent slowing up of the rate of movement of water through the soil. Many soils contain a considerable proportion of particles smaller than those last mentioned, especially in their subsoil horizons. These fine colloidal particles tend to decrease the size of the drainage channels through the soil and cause them to offer great resistance to water percolation. Imperviousness is usually most highly developed in fine textured soils which necessarily have minute interspaces and hence high friction. This condition is usually intensified in the subsoil horizons.

The Meaning of Flocculation

I T IS well known that colloidal particles such as exist in soils, may be present either in a highly dispersed state where each particle acts as an entity, or, they may exist in clumps or masses made up of a number of individual particles. In this latter case they are said to be flocculated. A soil horizon in which the colloidal particles are flocculated is much more permeable to water than one in the deflocculated condition.

This condition of flocculation depends largely upon the reaction of the soil, an acid reaction causing dispersion or deflocculation. Flocculation may be caused to take place by decreasing the acidity by means of additions of lime-stone.

Obviously, the decision regarding the proper depth and spacing of drainage lines cannot be made arbitrarily; it must be decided entirely with reference to the character of the particular soil profile involved. The depth, thickness, texture, colloidal content and reaction of the various soil horizons must be taken into consideration. Each soil type has its own individual combination of these characteristics, and the depth and distance apart of the tile lines must be determined accordingly.

Minnesota Greenkeepers Assn.

THE young and thriving Greenkeepers' Association of Minnesota which was organized April 5 has already issued its booklet containing constitution and bylaws and other information.

The booklet states that there are twenty-six clubs in the Twin Cities district, which includes Saint Paul and Minneapolis. Seventeen of these clubs have already joined the association.



The object of the Minnesota Association shall be to advance the art and science of greenkeeping, to cement the greenkeepers of the state into a closer relationship with each other and the National Association, to collect and disseminate practical knowledge of the problems of greenkeeping with a view to more efficient and economical maintenance of golf courses.

Eliminating the Compost Pile

Many greenkeepers still wonder whether it is possible to get along without a compost pile. Quite a few othersgreenkeepers not tied down by traditions anent the growing of grass, have discovered that it is not only possible to do away with a compost pile but that such procedure is the most effective method of producing a set of uniform, healthy, fine, thick turf greens of a rich shade.

The experience of Grange Alves, pro-greenkeeper at the Acacia Country Club, of the Cleveland, Ohio, district, ought to prove interesting. Alves has done away with the compost pile at Acacia.

All Alves used on the greens at Acacia is Lecco and sand. The sand, free of pebbles and sediment, was used as a topdressing. The sand is distributed with a Stumpp & Walter topdresser and rubbed into the turf with cocoanut mat. The Lecco is applied by hand. Alves has been applying sixty pounds of Lecco to a green of five thousand square feet. On a green of nine thousand square feet he has applied eighty pounds.

Another of the conservative greenkeepers, W. H. "Bertie" Way of the Mayfield Country Club, Cleveland, like Alves, has had little use for a compost pile this year. Way has applied fifteen tons of Lecco to the greens and fairways at Mayfield and the course was never in better condition. Mayfield has always been noted not only for its greens but fairways as well. Many give Way credit for being a past master when it comes to fertilization.

The most startling thing Way did was to give the No. 2 green, smallest on the course, one hundred and fifty pounds of Lecco in one hour. That was on July 5. The green at that time was brown in color and Way believed it had gone. In a little over a week this green had come back a richer green than ever. The blades of grass were noticeably finer and the grass in general denser over the whole green.

One of the clubs to discard its compost pile was the Kirtland Country Club, of Willoughby, Ohio. This course is in charge of Arthur Boggs. Like "Bertie" Way, Boggs uses only Lecco and a sandy loam as a topdressing on the greens at Kirtland. Boggs also uses Lecco on his fairways. Another club to eliminate their compost pile is the Pepper Pike Country Club, Cleveland, O.

Tournament Schedule

- July 26-28—Annual Buckwood Trophy Tournament at the Shawnee C. C., Shawnee-on-Delaware, Pa.
- July 31-Aug. 5-Public Links Championship, Cobbs Creek Course, Philadelphia, Daniel Flaherty, Greenkeeper.
- Aug. 15-18—Buffalo District Amateur Championship, Cherry Hills Country Club, Charles Behm, Greenkeeper.
- August 27-Sept. 1—Western Golf Association Amateur Championship, Bob O'Link Golf Club, Chicago, Ben Freberg, Greenkeeper.
- August 30-31-Walker Cup Matches, Chicago Golf Clmb. Wheaton, Ill., John MacGregor, Greenkeeper.
- September 10-15-National Amateur Championship, Brae Burn C. C., West Newton, Mass., John Shanahan Greenkeeper.
- September 24-29-Women's National Championship, Virginia Hot Springs Golf and C. C., Virginia Hot Springs, Va.
- October 5-6-Lesley Cup Matches, Winged Foot Golf Club, Mamaroneck, N. Y., John Elliffee, Greenkeeper.

Say you saw the ad in The National Greenkeeper