

form a layer. Sometimes the layer is near the surface; sometimes subsequent topdressings have buried the layers more deeply. In either case the layer of different textured material causes trouble in the maintenance. Layers interfere with normal capillary movement of water. Roots seldom grow through the layer, so the root system is limited to a small amount of the surface soil. Aeration breaks through the layer so roots can penetrate and, in time, aerifying will mix the layered material into the other soil.

Thatch is another condition that interferes with growth. Stems, roots and clippings sometimes accumulate at the surface of the soil. They form an impermeable roof over the soil, which interferes with penetration of water, plant foods and air. Thatch is an unhealthy condition, too, in that it harbors disease organisms. Aerifying breaks through the thatch allowing fertilizer, water and air to reach the soil. In time, the mixing of soil with the thatched material will cause decomposition of the thatch into soil humus.

Soil samples taken after aerifying show clearly the penetration of water. Moisture spreads rapidly through the loosened soil surrounding the cavity. Increased water absorption is of considerable importance from a practical standpoint. Studies at Penn State indicate that as much as 80% of the applied water may run off sod on compacted soil. What does this mean in dollars and cents? In the 1951 Annual Report of the Detroit District Golf Assn., costs for watering fairways were reported as ranging from \$1,000 to \$2,000 per season. Golf courses report that water requirements are reduced 20% to 50% by aeration.

After lime or fertilizer has been applied, these chemicals can be found down in the Aerifier holes. In tests with phosphorus, a 56.9% increase in phosphorus in the 2 to 6 inch layer of the soil was found in the

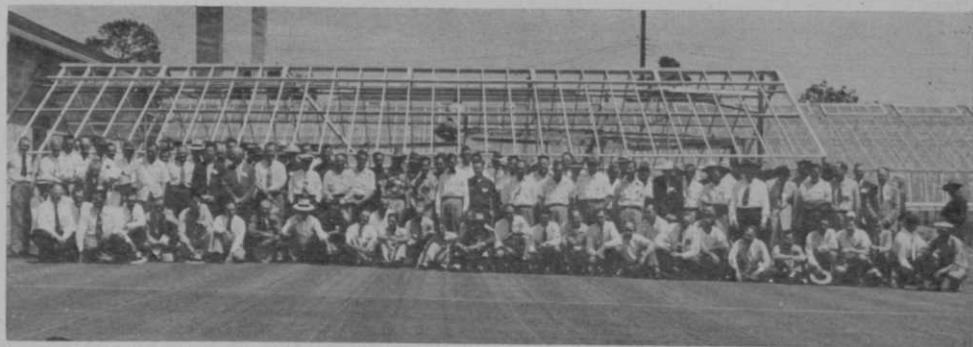
aerified plots. Undoubtedly the deeper placement of fertilizer is an important factor affecting the increased root growth noted after aeration.

Does air itself show any effects? A putting green in the Chicago area was aerified one time over and the holes left open. No topdressing or fertilizer was added. When growth began in the spring each spot where the Aerifier had opened the soil was visibly greener than the surrounding grass.

The movement of air into the soil depends primarily upon the amount of large pore spaces. Factors such as temperature, barometric pressure, wind and rainfall play only a minor part in the soil aeration — they account for about 9½% of the total soil aeration. The greatest part of the air moves into the soil by way of diffusion. There is evidence that the natural cracks in soil do not provide adequate ventilation. Man-made openings facilitate the exchange of gases between the soil and the atmosphere.

A further application of aeration is the preparation of a seedbed in existing turf. The surface can be broken up so seed can come in contact with soil, while the existing cover is left intact to prevent erosion and washing. Uniformly good results have been obtained using the Aerifier to prepare a seedbed in existing vegetation.

Although extensive aeration of soil under sod is a recent addition to maintenance procedures, in practical usage its value has been demonstrated. Reduction of water runoff, more efficient use of fertilizer, more extensive root growth, correction of compacted, layered and thatched conditions, preparation of a seedbed are visible effects produced by aeration. Aeration is routine procedure on many special purpose turf areas. There is every reason to believe that equally satisfactory results will be obtained on other grassland areas.



—Mascaro photo.

They were at Tifton — the biggest group yet to attend the Georgia turf conference. Behind the group is the partially completed greenhouse for turf research, being constructed with funds supplied by the Georgia State Highway Dept. Glenn Burton spearheads the research work at Tifton.

# Financing Kids' Playground at the Country Club

By WM. J. DUCHAINE

Many parents are unable to enjoy their golf club membership to the fullest extent nowadays because of the unavailability of baby sitters at a time when they want them.

There's a solution to the baby sitting problem for golfers, however. Swings, slides and other playground equipment, installed near the clubhouse, keep the youngsters busily and safely engaged while father and mother enjoy themselves on the fairways.

But for many golf clubs, particularly those in the small towns, the purchase of playground equipment also presents a problem. It's a financial problem.

All over the country, however, golf clubs are conducting various money raising projects for making much-desired improvements to their facilities. These activities run the gamut from card parties to pancake suppers, basket socials, square dances, golf exhibitions and fashion shows.

One of the best money raising stunts is the home talent play or minstrel show. Members get a big kick out of taking part in a show before a home audience; at the same time helping to raise money for a worthwhile cause.

"There is a little bit of the ham actor in all of us," quipped one club member.

Some organizations raise sums of money by holding auctions. To conduct an auction successfully, plans should be laid at least a month in advance. A central headquarters should be established with someone there at all times to answer the telephone and take the names and addresses of persons who wish to contribute clothing, household goods, foodstuffs and other items.

## Push Publicity Campaign

After giving an auction good advance publicity, it is important to see that the sale itself is well handled. A large place, preferably indoors, is needed for attractively displaying the merchandise. And you need a good auctioneer. Quite likely there is a professional auctioneer in your community who would be willing to serve a good cause. Or if he is too busy, he certainly would be glad to give the auction committee a few pointers on how to enliven the bidding.

Solicitations for outright donations al-

ways are an effective and quick way of raising cash. Such campaigns must be accompanied by a well-planned advertising and publicity program that will fully acquaint the public with the need for playground facilities.

Every avenue of publicity should be tapped. Usually, each organization has within its organization some men and women with ability to write good copy. Such people can be helpful and ease the burden on the newspapers and radio stations, who are always willing to help promote a worthy undertaking. Handbills, posters, letters and personal calls are also important, and should not be overlooked in a publicity program.

In every community there are always a certain number of persons who are willing to give generously if they are convinced their money will be put to good purpose. Personal calls upon these prospects by influential members of the fund raising committee oftentimes will bring in the sizable sums that are needed to put a fund raising campaign over the top.

And now that your playground financing project has been a success, what are you going to do to get your money's worth?

First of all, it is always a good idea to do business with a manufacturer who has a reputation for producing high quality, extra durable playground devices. This does not mean paying premium prices, either, as a comparison of prices and equipment will reveal. On the other hand, buying on a price basis alone is false economy. It is possible to get the highest grade equipment at a reasonable competitive cost.

What devices should be purchased when establishing a new playground? Well, this all depends upon how much you have to spend, the number of children to be served in the area, and the amount that is available. Swings, slides, see-saws and Castle Tower climbing structures are basic units, of course.

"Playground planning is not an exact science, neither is it a highly intricate problem that can be solved only by expert engineers or technicians," says Norman R. Miller of Anderson, Ind., VP of American Playground Device Co. "There are some fundamental rules for planning ideal, approved play areas, however. Children play



## CLASS PAYS OUT IN SALES

Your first glance at this pro shop tells you it is at a fine club. It is Harold Sargent's shop at East Lake CC, Atlanta, Ga. Harold — in case you don't know — is the fellow with the club in the right foreground. Notice, especially, the lighting. It costs a little more but it makes the merchandise look its best. The table displays of shirts are frequently changed — most of the time by the steady buying of members and guests. Very wise is the location of the hats and caps by the shop door. That's a location to remind a man or woman, exactly at the right time, that headwear is needed.

best and benefit most when they play within their own age groups. Thus, your ideal playground should incorporate a primary play area for the children two to six years old, a junior play area for children six to ten years, and a senior area for children ten years and older.

"Further, the apparatus in those areas should be sized and designed to intrigue the interest and develop the abilities of these distinct age groups, and, you should install in these areas only strong, ruggedly built safe equipment of approved design, free from mechanical gadgets or parts that will require constant maintenance, attention or supervision.

"The apparatus units should be installed in line or in batteries to conserve ground space for the essential free-play, organized game areas and to provide a neater, more orderly, more attractive appearance generally with additional safety for your children. Finally, trees, shrubs and flowers

should be planted profusely to enhance the natural beauty of the playground and to provide shade for slide bedways and climbing structures and for those desirable story-telling nooks and hide-a-way corners that so delight all children."

### Lloyd Mangrum Tells "How to Break 90"

Lloyd Mangrum and Otis Dypwick, athletic publicity manager at University of Minnesota, have collaborated in an excellent and comprehensive book, "How to Break 90 at Golf." It's published by Fawcett Publications, 67 W. 44th St., New York. It sells for 75 cents.

This 144 page, profusely illustrated book, is particularly valuable to the average player as it not only gives concise, simple and clearly illustrated information on shot-making but also tells him how to play the

course so he won't waste strokes by hacking with hope rather than sense. The book gives considerable detail on equipment so the average player will understand more about the purposes for which clubs are designed and use good judgment in selecting the club for the shot to be played.

### "Golf of Our Fathers" Tells Game's Background

"The Golf of Our Fathers" is an entertaining and concise history of golf written by W. K. Montague, a member of the Northland CC, Duluth, Minn. A limited edition of the book is being sold by Harold Clasen, Northland pro, for \$4 each.

Montague, in dedicating his book to members of the Sunday Breakfast Group at Northland, identifies himself as a "maniac golfer."

He contrasts his catch-as-catch-can start in golf about 35 years ago with his introduction to that other Scotch game, curling. Before his application for membership in a curling club was accepted a veteran curling enthusiast told the history of the game and impressed upon the prospective curling the game's high standard of sportsmanship.

Montague is convinced that every golfer would have more fun by playing the game

according to the rules, and that if the very interesting historic background of golf were known to its players they'd understand the basis of the rules and the reasons for the game's development. He makes an amusing—and to us apt—parallel between golf as it should be played and golf as it often is played, and fundamental poker and the trick coed variations of poker that have driven many a sturdy old devotee of basic poker to concentrate on drinking, knitting and cutting out paper dolls as evening entertainment.

Montague gives the background of the course, the organization of clubs, the ball, the clubs, the caddies and pros, the amateur stars, women's golf, the golf swing, the use and misuse of winter rules, all the rules, the greens, "through the green," match and stroke play, and golf books. Bernard Darwin; Cmdr. Carson, formerly sec., R&A, Bernie Ridder, Runcie Martin and Jack Level, helped Montague get his source material together. Montague organized and condensed the material in a fine job of selection.

The scholarly "maniac golfer" hasn't taken the attitude that any change in golf is profaning the temple. He maintains that progress has, and still can be made, in adjusting golf to changing conditions while preserving the eternal verities of the game's spirit.

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## Dedicate Guadalajara Amateur Invitation to Chick Evans

Eleventh annual invitation amateur tournament of the Guadalajara (Mex.) CC to be played Oct. 9-12, will be dedicated to Chick Evans and Carlos Belmont, veteran former national amateur champion of Mexico.

The Guadalajara event is one of the most delightful invitation events staged anywhere and is rated a top affair of the year by Americans who receive invitations from their Mexican golfing pals. The hosts put on a great party, there's golf in all flights, lively evening entertainment, and great hunting and fishing after the show's over.

Charles J. Smith is manager of the club and Tom Garcia, once asst. to McDonald Smith, is pro.

With Belmont and Evans being honored the affair this year will be significantly and merrily international.

## Steven C. Parks Dies at Watertown, Wis.



Steven C. Parks, 37, sales mgr. and asst. gen. mgr., G. B. Lewis Co., died at his home in Watertown, Wis., June 27 from a heart attack. He was widely known in the golf equipment field because of his successful manufacture and promotion of the Lewis ball washer.

Steve's father, for years president of the Lewis company, died Jan. 21 this year.

Steve was born in Watertown. He graduated from the University of Wisconsin and went into the Air Force, serving from 1941 to 1945. He became a major and was active in the ETO. He was club champion of the Watertown CC and took a prominent part in civic affairs. He is survived by his widow, two sons, his mother and sister, Mrs. Frank Baumgardner of Lancaster, O.

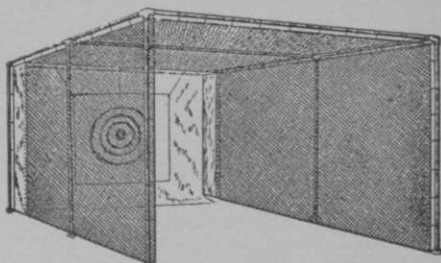
He was highly regarded as one of the foremost young businessmen of Wisconsin and was the sort of a fine, strong, genial character whose friendship was prized.

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### Stronger Grasses, Nitrogen, Poa Annua Answer?

By B. P. ROBINSON  
(At GCSA convention)

Turf research workers since 1917 have been trying to find the answer to poa annua control. Some of their findings are cited by Robinson as indications that poa annua might be crowded out by dense, strong grasses and nitrogen treatments.

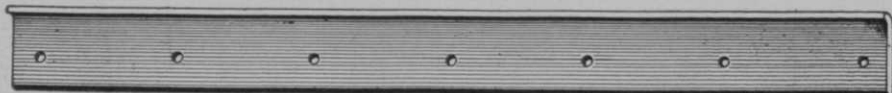
In 1917 Hartwell and Damon found that Rhode Island bent was resistant to invasion of grasses and weeds. The density of turf was given as the reason by North and Odland why velvet bent selections were more resistant to poa annua invasion than creeping or Colonial bent. De France and Odland found a similar relationship existed in Piper velvet bent. Differences between bent selections and between South German mixed bent and Kentucky bluegrass to weed invasion was reported by Welton and Carroll. Virginia creeping bent was reported by the same workers as being less resistant to adverse conditions and having a high nitrogen requirement. Strains of both velvet and creeping bent were found by Sprague and Burton to be resistant to poa annua invasion. Several improved turf grasses have been reported by Grau and

Robinson and Burton as being resistant to weed invasion.

On checking Virginia creeping bent (3-year average), Sprague and Evaul found that 2.83 lbs. of actual nitrogen per 1000 sq. ft. annually from sodium nitrate or ammonium sulfate decreased the incidence of poa annua 50% or more. Slowly acting nitrogen carriers had little influence. Acid forming inorganic nitrogen sources were reported by Sprague and Burton to be more effective than other nitrogen carriers in reducing annual bluegrass invasion. It was also found that 60 lbs. of nitrogen per acre reduced the seed yield of poa annua one half under that of 30 lbs. of nitrogen per acre. De France and Odland found that the invasion of grasses into creeping bents was highest on organic and lowest on inorganic nitrogen plots. South African workers have reported that high nitrogen treatments encourage grasses to compete successfully with weeds. Nitrogen applications previous to or at the time of cool season grass establishment has resulted in improved turf.

Either in the North or South it appears as if the normal time for germination of poa annua seed coincides with the period when permanent turf grasses are suscepti-

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ble to invasion. It is apparent, however, that the reason why annual bluegrass occupies turfed areas is not clear. Sprague and Burton conclude that the occupation of turfed areas by annual bluegrass, apparently, does not lie in greater tolerance to conditions of unfavorable nutrient supply, but in the ease of re-establishment of the bluegrass by seed in seasons when unfavorable soil conditions have been temporarily corrected by moderated weather conditions.

From the experimental data on hand, it is possible to conclude that grasses resistant to poa annua invasion may be obtained. Management studies are needed, however, to test this resistance, determine the effect of amount, kind, and time of nitrogen applications on invasion resistance, and to determine interaction effects on southern turf of seeding rates and nitrogen applications.

### Reduces Poa Annua in Greens

By A. R. Twombly

Poa Annua and I had our first meeting at the Pelham Country Club in the late spring of 1938. That summer proved to be a hard and unpleasant one for me. The greens there were supposed to be of

South German mixed, Seaside & Colonial bents. As the years passed Poa annua had come in to such an extent that all 18 greens were infested and some of them so badly that it was 90 per cent annual bluegrass and ten per cent bents. That spring the greens were beautiful but after a few hot, humid days in the summer those greens presented a discouraging problem. In the early fall just when I had reached the zero point we had a few cool, damp days and the fall crop of poa annua became established and turned the greens into a beautiful sight once more and gave the golfers a fine putting surface.

After that first season I realized the potential danger in our greens becoming entirely Poa annua. The next few years I spent studying the growth and habits of this grass. I found that with the heavy, tight clay soil and the poor drainage we had, compaction was prevalent. This made an ideal condition for Poa annua but it caused the permanent grasses to have a very shallow root system.

To correct this condition I carefully checked all the sprinklers we used to determine the proper size and capacity so each green would receive only the amount of water it could absorb. Local-

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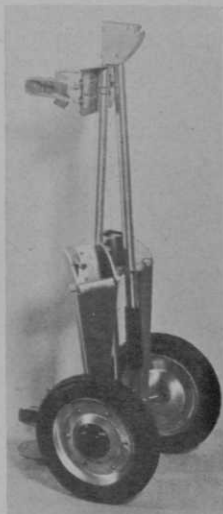
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to try early spring fertilizers as a partial control of *Poa annua*.

During the next five years I studied each green individually and experimented on some greens and on parts of others. Each green that had been fertilized early in the spring showed a decline in annual bluegrass and a strengthening of the bents. Some of you may feel that with the early fertilizing *Poa annua* will grow more luxuriantly and therefor crowd out the bents but from my experience I found just the reverse was true.

Do not worry about the heavy growth of *Poa annua* for it will soon die out. If the soil conditions are favorable and there is sufficient amount of nitrogen available the bents will make a strong, deep rooted, sturdy turf good for the golfers and hard for the next crop of *Poa annua* to penetrate.

When I resigned at Pelham last fall to accept the position as Principal Park Supt. at James Baird State Park, *Poa annua* on the greens had ceased to be a problem at Pelham.

I do not say this is a cureall. I do know that under our soil and climatic conditions the combining of a P H level of about 6.5, frequent aeration (six times last year), careful watering and the fertilizing procedure I described did reduce *Poa annua* to a great extent. What I did not eliminate I was able to hold throughout the season. If you make conditions more favorable for the growth of the permanent grasses and maintain a program of adequate fertilization to keep the bents strong and vigorously growing, *Poa annua* will cease to be a problem.

## Greenwood Experiments to Improve Its Course

By Johnny Cochran  
Pro-supt., Greenwood (Miss.) CC

Our turf experiments at the Greenwood CC started back in 1946, about the time or just before the beginning of the Tifton Experimental Station. There were many things we didn't know about Bermuda grasses and since there was no Tifton to give you the answers, we set out to try and find them.

Our first experiments were started after we had established a nursery of perhaps 500 sq. ft. of common Bermuda. After a good putting surface had been provided various heights of cutting were used. One half inch,  $\frac{3}{16}$ ,  $\frac{1}{4}$  and  $\frac{1}{8}$  inch cuts were made. Some strips were cut twice daily, every other day, and some every third day. At the end of the season it was found that the strips we started out with and maintained with a daily cut of  $\frac{1}{4}$  inch in early part of season and later in drier and hotter part of year switched to

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$\frac{1}{2}$  inch cut had much more grass on them at end of season and were quicker to come back in spring. Since that time we have used this procedure and have never been without grass on our greens in the past five years.

Other experiments conducted with this same grass plot were with the application of fertilizers. Some strips were tried with ammonium nitrate, nitrate of soda, sulphate ammonia, Milorganite 6-8-8, 5-10-5, guano, Cyanamid, dried blood and sewage sludge, straight phosphate and potash. Various application methods were used. We achieved best results on greens by using a four-foot spreader, applying solutions dry and following with water.

In 1947 we were supplied with centipede seed grown by Tifton. This was grown and developed in seed bed, and later transplanted to fairways and tees. It did not work out too well. Season was too extremely hot and soil too tight. It would not take punishment in fairways with same height of cut as Bermuda and other grasses. We still have it but it is slowly being choked out.

Also in 1947 we developed a plot of velvet Bermuda #101 from strains furnished by Tifton. Attempts were made to get this in with the other Bermuda on the green. We have been unable to get this to take. It is a very fine Bermuda that compares with bent in many respects. It is very delicate and will not take a lot of punishment. It will not stand daily cutting unless cut is made at  $\frac{1}{2}$  or  $\frac{3}{4}$  inch. This is reason why it is hard to introduce into the other Bermuda. If left to several inch cuts in rough it will spread faster than ordinary Bermuda. It has very little resistance to weeds and is very easy to become infested with foreign seeds after windy weather.

In March, 1949, we started with three cup changes of Tifton 57. By breaking them down we have today produced 500 sq. ft. in one season without too much trouble. This past year we started introducing this strain of grass into our greens with 4 and 8 inch cup plugs. However, Fred Grau tells me that faster and better results can be obtained with a 2 inch insert. We hope to have enough Tifton 57 to provide turf for three greens by the end of the year.

Some limited work has been done with St. Augustine grass. We started with 6 square yards this past July and have perhaps 36 sq. yds. now. We hope to use this in shady spots around the course.

Other experiments we have tried are with Zoyzia, Japonnica, Zoyzia Matrello, and Zoyzia 53. The Matrello happens to be the only one we have had over one season. We are trying several tees with Zoyzia Matrello and Merion bluegrass.

In October, 1950, we planted into our regular practice green 5 different types of cool weather grasses; Italian rye, red fescue, Illahee fescue, Highland bent and Merion bluegrass. Up to January 1, the Illahee had developed so much faster and looked so much better we were thinking about trying some of it in our other greens next year. Since that time I have sowed all the other plots again and top dressed. Now the Highland bent and the red fescue are making rapid strides to catch up. But I believe the Illahee was much easier to get started, thus the reason for shaping up faster. Merion Blue hasn't gotten a good start yet so can't say what it is going to do.

Our experiments with carpet grass have led us to believe that by aerifying again in March and sowing with a whirlwind spreader we will get an established turf strong enough with carpet grass to overgrow Dallisgrass. For the past two years we have tried this on a small scale and had wonderful results. Unfortunately, our club has never had too much pride in their fairways. No fertilizer was ever used.

We have stopped top-dressing our greens. Since we have gotten them free of weeds some of our greens haven't been top-dressed in five years. We aerify thoroughly many times a season but the only top-dressing brought in is when we plant our rye. We use our dressing from the aerifier plugs brought to the surface. We in turn profit not only by the labor and time saved in preparing top-dressing, but also do not have the problem of fighting weeds brought in by top-dressing.

## PART OF A PRO'S TOUGH JOB?



Alice (L) and Marlene (R) Bauer of the Spalding staff starred in an exhibition match at B. F. Goodrich Co. annual Tee Party held at the Goodrich Fairlawn CC, Akron, O. After the round the girls were entertained by Ed Kirby who has been pro at the club for 26 years. Ed does not seem to be regarding his overtime work as unpleasant.