STYLE 7500
Ambertone and White Buck
Flexible Back Part
Full Leather Soles — Heels
Removable Giant Based Spikes
Weather-Sealed

STYLE 7804
Fine English Calfskin
Flexible Back Part
Full Leather Lining
Leather Soles — Heels
Removable Giant Based Spikes
Weather-Sealed

STYLE 8026
Etonettes for Ladies
New Three Eyelet Tassel Tie
Fashion Leader — Blue and White
Flexible Vinylite Soles — Heels
Removable Giant Based Spikes

“Our Etonettes are truly the Favorites of the Fairway”... say:
Marlene — Alice Bauer

For colorful combinations — for style
— for a wide selection of patterns —
Etonettes are first choice of today’s smartly dressed lady golfers.

MARLENE and ALICE BAUER,
sensational young golfing stars.

From the Boot Shop of Charles A. Eaton, Brockton, Mass. Fine shoe makers since 1876.
This large display by the clubhouse, giving names of winners of previous Northland Invitation tournaments reminds the members and guests of the history and prestige of the event.

the limited field we can start play at 8 a.m. and get the last ones off about 2 p.m.

Our invitation work is year around and we are always trying to improve it. The first real action is about July 1st. when letters are sent to all Northland members along with a form for them to fill out if they have any friends they wish to invite.

Copy of this letter follows:

Dear Member:
The 27th Annual Invitation Tournament will be held August 7, 8, 9 and 10. There will be a flight for everyone, champ or dub. Each flight will consist of eight players with the exception of the Championship Flight and the First Flight. The Championship Flight will consist of the 32 low qualifiers, and the First Flight of the defeated 16 of the Championship Flight.

In order to avoid last minute congestion, and to accommodate our out-of-town guests, many of whom will have to play Thursday afternoon, it is requested that wherever possible members arrange their starting times Thursday morning. As in the past, qualifying scores will be accepted on Tuesday or Wednesday preceding the actual tournament date from any entry not aiming at the Championship Flight.

All players who hope to make the Championship Flight must tee off before two o'clock on Thursday, thus insuring ample time for a play-off, if necessary.

Those who have enjoyed this fine tourna-

With the letter is enclosed a form on which the names, addresses and clubs of those to receive invitations are to be filled in. There are 20 spaces on the form.

Next a committee goes over the invitation requests and if there are any names on these lists that the committee feels should not be invited the man issuing or asking for the invitation is notified that his request has been turned down. We have mild arguments over this but the committee is firm and generally can prove why the man is not desirable.

Complete Record of Entries
A record of all invitations mailed out is kept in the club office and as entries are received they are recorded as well as the letters of regrets.

I keep a book of entries entered as they are received.

On sheets in my loose-leaf book appears each player's name, his locker number, his caddie's number, the player's handicap, his club, address and starting time.

The caddie master and locker-room man each get a carbon of these sheets.

Our caddies work on a merit system and the boy with the best rating as of Aug. 1 gets his choice of the players. We run an ad in the local papers for caddies and after our regulars have jobs the extra boys fill in.

Our locker man sends out cards to each Northland member asking him to give up his locker or share it with a player. As entries are received their name is put on a locker in big letters so it will be easy for the guest to get located.

About June 1 I make out the match play sheets putting in the starting times for each day, etc. I anticipate the number of flights from the previous year's play and put in extra flights with real early or late starting times to take care of any overflow. With a limited field this will be easy to figure. With the times, etc., on the match play sheets it speeds up the draw as all I have to do is fill in the players' names.

From experience I find that we can send

Golfdom
For discriminating golfers—you who demand the very finest in technical design, in craftsmanship and in superior performance, I sincerely recommend ULTRA HAIG woods, irons and golf balls. Manufactured for and available exclusively through golf professionals—the grandest gentlemen I know.

WALTER HAGEN
Division of
Wilson Sporting Goods Co.
Grand Rapids 2, Mich.
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Each year "vital statistics" of the preceding year's Northland Invitation are displayed according to the above formula and it attracts considerable interest.

out only eight foursomes per hour and spaced as follows, 8:00-8:07-8:14-8:21-8:30-8:37-8:44-8:51 etc. Seven minute intervals are OK but getting that extra two minutes each half hour does the trick. In the 1952 event we never had more than one foursome on any tee at the same time, even on the par threes.

About ten days before the championship starts, starting times for the qualifying rounds are set and each player is sent a card telling him of his starting time and the members of his foursome. This card is enclosed with a letter signed by our president which expressed the club's pleasure at having the entrant accept the invitation and giving all details of the program, which includes a dinner dance Saturday.

We have a PA system of our own and I keep the mike on the first tee and have speakers in the locker-room, grill room, practice tee and practice green.

Handling the Clubs

As the players arrive we have two boys getting the clubs out of the cars. They bring the clubs to the shop where they are tagged with the players' name in large letters and the tag is tied to the top of the bag.

Clubs are cleaned after each day's play and are placed alphabetically in corners of the shop. In the morning the clubs are lined up alphabetically outside the shop and are given to the caddies as the players are ready. We have learned from experience not to store the practice balls but have the players keep them in their lockers.

Scoring Is Organized

As players tee off in the qualifying round their names are put on the medal play sheet, also each name and home town is printed on a 5 in. by 3 in. card. As the scores are turned in they go up on the medal play sheet hole by hole and then the total is written on their card and placed on the special blackboards you will see in an accompanying picture.

I had a large board made at a local shop. It is simple as it is just reinforced wall board with notched strips of wood to hold the cards. The championship flight board is just plywood with clips nailed on to hold the cards. These boards get a lot of compliments as the players can see how they stand as to flights etc.

As scores come in cards are constantly shifted and when the qualifiers are all in the cards are in order according to scores. Then the boards are unhooked from the big score board and carried into the shop. In making the draw for the flights it is very simple as we just take them off the board in order.

This year we made the draw for 32 in the championship plus 27 flights of eight in less than one hour.

Starting times for the matches are then posted in the clubhouse and players know who they play and at what time before they leave the club. Of course it is also published in the morning paper. I feel that the success of our tournaments has been in the speed in which the draw is made.

In order to eliminate the possibility of a play-off for the championship flight in the dark Thursday or early Friday morning we make the qualifying championship hopefuls tee off before 2 p.m. on qualifying day. As a rule there is a play-off and we make quite a show out of it. This year eight played off for two places and as they were announced over the PA they teed off and quite a gallery followed.

The beaten 16 in the championship flight make up the first flight and the losers in the second round of the championship and first flights go into the consolation flights.

We award prizes for the winner and runner-up in each flight and to the consolation winner in each flight. With the (Continued on page 109)
Mid-Atlantic "Operation Zoysia" Exhibit "A" in Cooperation*

By WILLIS H. GLOVER

Simple as it may appear to the casual observer Operation Zoysia has many ramifications. The Mid-Atlantic Assn. of G.C. Supts. believes that part of its function as a professional organization is to apply its efforts in the direction of proving for itself, and for golf, new findings which research produces in turf management. Improvement of fairway turf in the Mid-Atlantic area has been the number one problem. USGA Green Section research on fairway grasses has been going ahead at Beltsville, Maryland for years. From this have come several warm season grasses which seemed to have promise. Proving conclusively that Zoysia is, or is not, the best answer to the problem of a better fairway turf, is the important task chosen by the Mid-Atlantic Assn. as its contribution for 1952. This came about through the complete cooperation of the USGA Green Section.

Not since the advent of Merion blue-grass had so much been said about any one grass in any one year. The Green Section had been severely criticized for releases to the press which were said to be "premature" and which were claimed to have put some superintendents in a bad position. Since the USGA had not considered it one of its functions to prove research in other than small demonstration plots in its turf gardens, it became apparent that there was a gap to be filled. The Mid-Atlantic Assn. of G.C. Supts., accepted the challenge and hopes that it is doing golf a great service.

Fairway turf research at Beltsville has for a long time been directed along channels from which it was hoped a grass, having many more desirable attributes than the poa-annua-crabgrass combination so prevalent and unsatisfactory in the area, would come. Everyone is looking for a pure stand of grass which can be clipped close, which will heal rapidly, has good color, doesn't have to be watered, and which is disease resistant or free. In other words, a made-to-order turf. It has been said that probably Meyer Zoysia comes as close to being the answer to the golfer's prayer as any turf selected so far. It also is true that we shall never find the perfectly adapted grass. One species of grass, like the weather, will never completely satisfy the desires of everybody. Zoysia is no exception.

There were some things we knew about Zoysia, some more which we could guess at and still more which we knew nothing about. We had followed the progressive research on Zoysia for many years — we had seen selections made which were improved grasses from observational data. Meyer Zoysia seemed to have a great many of the desirable attributes of the grass we were looking for. Under demonstration plot conditions it seemed to be entirely winter hardy; established itself rapidly from plugs, stolons and rhizomes; became pure stand excluding crabgrass effectively; had no apparent enemies such as fungi and insects; would grow on poor soil if not too wet; would produce a superior surface to play from if closely clipped; and would heal rapidly because it is difficult to take a deep divot from it. Its stolon and leaf structure is stiff enough to permit sufficient backspin to a properly hit iron shot, to offer proper resistance to the ball, and to give superior lies to wood shots.

We could only guess at or knew nothing about the following:

1. Under actual play how would the public take to the winter color?
2. What would it cost per acre to interplant existing turf?
3. What would be the best method of planting?
4. What type of planting material should be used, seedlings, rhizomes or plugs?
5. How far apart should planting material be spaced?
6. How much would planting operation interfere with play?
7. What mortality could be expected?
8. What time of year should the planting take place?

*Paper presented before GCSA annual Turf Conference

March, 1953

65
Turf Experts Depend on
SAFE, EFFECTIVE TERSAN®
Turf Fungicide
To Control Brown Patch

Here are five prominent golf course superintendents from the Philadelphia area, where brown patch and other turf diseases are particularly difficult to control. What they say here about keeping their greens in top playing condition makes another in a series of experience reports from leading courses across the country.

WILLIAM J. HANSBURY, course superintendent at the Philadelphia Cricket Club at Flourtown says: "I'm never afraid of burn or discoloration. 'Tersan' is always safe. Our 'difficult' months, of course, are from June through September 15, but by adhering to a program of spraying 'Tersan' on our greens every 7 to 10 days, depending upon weather, we keep them in excellent playable condition."

EBRHARD R. STEINIGER, course superintendent at Pine Valley Golf Club, Clementon, N. J., says: "We've been using 'Tersan' and F-531 ever since they came on the market. Now we depend on them to keep our greens green and free of disease. Some time ago we instituted a preventive spraying schedule and we're happy to report that brown patch is not a problem any longer."

JOSEPH J. RYAN, course superintendent at Rolling Green Golf Club, Media, Pa., says: "We tested 'Tersan' on one green when it first came out years back. We soon discovered that it's safe and effective and have been using it ever since without interruption. We like it because it can be applied without worry about discoloration or stopping grass growth."
ALEX W. STRACHEN, superintendent, Old York Road Country Club, Jenkintown, Pa., says: "This is a private club but gets heavy play. And, since we're in a 'brown patch' area, we're constantly fighting turf disease. However, by following a preventive spraying schedule with 'Tersan' we've controlled brown patch. There's no question about it—golfers have to have green greens."

Golf Course Superintendents:
You know the men quoted here. Their experience is based on results on their own courses. So, if you aren't using "Tersan" now, better give it a try and see how easy it is to keep greens in top shape right through the worst part of the season.

"Tersan" is green in color, blends with the grass. Comes in handy 3-lb. package for easy handling and measuring. It stays in suspension for even application. And—it's safe! Even inexperienced help can apply it without danger of injuring expensive turf.

For dollar spot, copper spot and pink patch, use Du Pont F-531.

NOTE: These Du Pont Weed Killers can also help you:
Du Pont 'Ammate' Weed and Brush Killer—for poison ivy and brush
Du Pont 2,4-D Weed Killers—for broad-leaf weeds in fairways.

PAUL E. WEISS, standing below with Bob Miller of the Du Pont Co., is superintendent at Lehigh Country Club, Emmaus, Pa. He says: "I've been growing fine turf for 30 years. Before 'Tersan' we waited for brown patch to appear before spraying, because we were afraid of burning and discoloring the grass. Now, by using 'Tersan' on a preventive schedule every week, we are able to keep the greens free of brown patch. We've been using 'Tersan' ever since it came on the market—it's efficient and safe to use. We like it!"

NOTE: These Du Pont Weed Killers can also help you:
Du Pont 'Ammate' Weed and Brush Killer—for poison ivy and brush
Du Pont 2,4-D Weed Killers—for broad-leaf weeds in fairways.
9. How much would planting material cost?

10. Could the average club afford to turn over acreage to Zoysia?

11. What balance of fertilizer should be used, and how often to apply and how much?

12. Would existing fairway grasses be completely removed eventually or would some native plants live with Zoysia?

13. In trying to arrive at a warm-season, cool-season combination is it best to establish the cool season grass first or last?

14. Would Zoysia completely control silver crabgrass and how long would it take?

15. How much of a problem would the invasion of greens by Zoysia pose?

16. Would there be compensating factors if invasion were to become a problem?

17. What would be comparable costs of maintenance between present fairways and pure Zoysia or summer-winter combinations?

In one short question — Is Zoysia superior from the viewpoint of playability and from the standpoint of economy in maintenance?

Plans for operation Zoysia were laid in the late fall of 1951 by the Education Committee of the Mid-Atlantic and the Green Section staff. It was agreed by the group that the Green Section would grow Meyer Zoysia seedlings in flats during the winter and would furnish two inch plugs of both common Zoysia, and both over-planted with Merion Bluegrass. Mid-Atlantic agreed to do the planting. The date decided upon was the last of April. The actual planting date was April 22. Fairfax CC offered its number three fairway for the project. It was decided that seedlings would be planted into one inch aerifier holes made during the day of planting. Plugs would be planted into holes made by the West Point two inch plugger.

Nature of Site Selected

The chosen site seemed to offer the desirable combinations of soil and existing turf into which we wanted to plant. The fairway slopes from right to left and changes from a hard, clay top to a damp lower section with fairly good soil. The fairway has nearly solid bent on the lower area and goes through Kentucky bluegrass to fescue on top. The tee end of the fairway for about 100 feet was a perfect stand of Silver crabgrass and Poa annua. Poa annua and soft crab were interspersed through the rest of the fairway. The fairway is not watered artificially and has been fertilized every fall for years with one thousand pounds of 6-10-4. No additional fertilizer was added during 1952. The fairway was cut at ¾ ins. during the season. West Point crabgrass rakes were used on the mowing equipment from the middle of June throughout the rest of the cutting season.

Planting Operation

The aerifying operation was started early on the morning of April twenty-second — so that the holes would be freshly made. The machine was operated from the bottom to the top of the hill so that planting could be done in the same direction making it easier on the men planting. It was also found that holes made going up the hill were easier to close tightly against the roots. It was fairly easy to lay off the rows on two foot intervals which was every fourth row. In the row every fourth hole was two feet. It was not too difficult to follow the rows up the hill.

As the men arrived they were instructed in how the plants were to be put into the ground. Each man had been asked to bring either a large screw driver or an asparagus knife or a tool of his own choosing. Instructions were to be sure that the hole would take the root, that the root be carefully placed into the ground even if the hole had to be enlarged, and that the soil should be firmly packed against the root. A constant check was kept behind the planters to try and avoid carelessness in planting.

Planters were lined up obliquely to permit more room per man and also to insure that no rows were missed. This system worked well because it allowed each man to guide himself by the man in front and to the left of him. It also stabilized the rate of planting and helped to keep everybody busy at a moderate pace.

The day was bright and the temperature climbed to the middle eighties. The soil was damp but the soil from the holes dried rapidly even though the aerifier operation was not too far ahead. A crew of eight men did the planting of plugs. Aerifier holes were used as a guide for rows and distance. Holes were cut by half the team and insertion of plugs was accomplished by the other half. Each
plug was firmed in and spread at the top by heel pressure of the planter.

Who Did It

A total of 55 men participated in the planting project. Included were golf course superintendents, some of whom traveled over a hundred miles round trip to take part. Some superintendents brought as many as three of their labor force with them. Many of the firms which cover the Mid-Atlantic area for golf course supplies and equipment turned out and took home sore hands, tired muscles, and sunburn. One green chairman, fresh from a hospital, was able to give moral support and encouragement to the weary.

A total of 275 man hours were consumed in the actual planting. 28,000 Meyer Zoysia seedlings were planted along with 4,800 two inch plugs of Meyer Zoysia, Common Zoysia and both species with Merion Bluegrass. These plug plantings were replicated three times along the fairway. The average cost per acre at current rates of pay for labor would approximate $100.

The last mechanical operation was to roll the fairway with a standard three gang fairway roller. The last mental operations were the satisfaction of having completed a very important task in the interest of golf and to the credit of the Golf Course Superintendents of the Mid-Atlantic Area. The departing wish or prayer was for rain. Some of the boys must have had a private line and good connections with the Man up there because the rains came the next evening.

First Season Observations

[It is important to stress the fact that, the total value of this project cannot be determined during the first year nor during any one year. The aggregate of all observations and the final determination of facts pertinent to the progress of this project may not come for several years. However, when it does come, there will have been a very interesting living story of what Meyer Zoysia seedlings and plugs will do under actual playing conditions and actual maintenance of fairway turf.] All that can be given at this time is a progress report of the first year's observations.

The fact should be mentioned that conditions of soil at the time of planting were near ideal and that precipitation immediately after and during the summer were optimum. The whole summer season was extremely favorable to Zoysia and Ber-

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Teaching Player to Know Course Problems, Biggest Job

By LEO J. FESER
Wayzata, Minn.

I wonder if ever a morning dawned on any golf course in America or elsewhere when the first thoughts of the man in charge were not applied to what was "most important". As many are called, but few are chosen, so it is with the problems of golf course maintenance. What is most important today may be of minor consequence tomorrow; there are never enough hands to hold time.

As I look at the business of golf course maintenance thru somewhat wearied eyes of experience, I wonder if possibly the greatest and most important problem of all is one of education. Not education of the men who supervise maintenance (some of our weariness is attributable to education) but education of the golfer.

The enthusiastic yet patient golf scholar devotes time and energy as well as good hard cash to learning how to hit a golf ball. He rightfully expects dividends on his educational investment. He guards his personal implements with jealous care and his stomach does somersaults when his own hook carries his ball away into the great unknown. Yet he has no qualms about being bitterly disagreeable if a patch of turf succumbs to hostile environment, leaving the bare area that no one loves. His divots freckle the landscape, but he sees no reason why the dollar spot isn't controlled.

Golf course maintenance presents many more technical problems than our golfers realize, and if they can be enlightened on this score, understanding and cooperation will be increased. It seems to me that we have overlooked the possibilities along these lines, and that action in this direction will do much to ease the pressures on the golf plant managers.

I think it was Franklin who said something about an investment in knowledge paying the most interest. Certainly an understanding of the basic problems of golf course management on the part of those who pay the bills would be beneficial to all. To bring about that understanding looks to me like a very important, if not most important problem.

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muda. This was evidenced by the unusually rapid growth of established plantings and elsewhere on the golf course.

Observations and counts throughout the summer and pictures at the end of the growing season proved some interesting points.

1. Mortality in two inch plugs amounted to practically zero per cent.
2. Mortality throughout the seedling plants was less than fifteen per cent. Actual counts on the rows spaced about equally from one end of the fairway to the other in late fall showed 85% survival. However, it is reasonable to expect that actual survival will be more than 85% — because in the Silver Crabgrass it was extremely difficult to identify Zoysia plants after the frost had changed the color. Consequently, accurate counting was nearly impossible without spending too much time. A spring count before Silver Crab comes on may show a higher survival over all.
3. The rate of growth of plugs exceeded that of the seedlings but not in the same ratio of their comparative original size when planted. Actual photographs show that surface area of plugs developed to as much as 6 inches and the rhizome spread developed to as much as 11 inches — surprisingly enough the crown area on some seedings developed to 4 inches and the rhizome structure to 9 inches. This could point to strong seedling vigor during this last season which might not hold for every season where seedling planting is compared with plug planting. However, on watered fairways where seedling survival would be guaranteed, this seedling vigor might be evident.
4. There seemed to be some indication that the seedling plants competed with soft crabgrass better than it did against strong bent. This observation did not hold true where the competition was between seedlings and Silver Crab.
5. Little difference was observed between survival on the damp area of the fairway over the highest elevations, nor was there noticeable differences in spread of plants from the low elevation to the high.

Enthusiasm may promote the desire to enter into conjecture as to what will eventually happen in this project. Progress reports will, however, be made from year to year confirming only what can actually be seen by the eye and recorded by the camera.

Other Values of the Project

Beside the factual knowledge and experience to be gained for the benefit of golf and in the interest of better turf for everyone from this project, equal importance must be attached to another side. Perhaps, the importance of this project to the Golf Course Superintendents Associations, both local and national, may be selfish. However, we think it is justifiable even if it is selfish.

There exists now and there has always existed a void between turf research and the proof of scientific findings. No group has filled this empty space. The proof of this statement lies in the history of turf establishment and management in the past. Every superintendent with years of experience with turf, as well as club officers and golfers have witnessed the selection of new turf grasses and have experienced their recommendation and use only to find to their sorrow that not enough time had been spent proving that the strain was superior. The history of Virginia bent is a good example. The same has been true in the past with materials used on golf courses. The accumulation of copper and its resultant toxicity to grass testifies to the above fact. Many others could be mentioned.

The above statement is not made with the intention of detracting from the great research which has been done by the Green Section and State colleges and manufacturers of equipment and chemical companies. The comment only points to the fact that the researcher is not in a position to prove in the field of actual operation what research indicates under controlled or sample plot conditions. This points directly to the fact that the organization of golf course supt.s offers the logical solution to the proof of research on the golf courses in representative sections of the United States and Canada.

The importance of projects such as operation Zoysia cannot be over-stressed. The value of similar projects in any area will accomplish the same ends which have begun to appear in the Mid-Atlantic area. The Mid-Atlantic Assn. has enjoyed considerable national and local publicity from this project. Much interest is in evidence locally from golfers, home owners, gardeners, and club members. Recognition (Continued on page 110)