

through disease from unexpected causes.

I am not alone in this opinion as Ray Didier of Chicago's Tam O'Shanter club has already accomplished just what I am proposing. He has increased his irrigation capacity to where he can water the entire course in 14 hours, if necessary.

Does this theory conflict with the trend toward the use of less water in turf management as proven by our university research and the research of the USGA? No, I don't believe it does. Because if we can water all of the course in one night we could then use more frequent but less application of water.

As it is today we must start watering fairways about the next night after a shower in order to get around all of them in several nights. Where with greens and tees we can wait until they are in need and then give them what they require.

Fairway turf is maintained completely different today from what it was 15 to 20 years ago, as to type of grasses and height of cut but we have not taken the necessary steps to keep up the facilities for the management of this turf as applies to irrigation. We are sure now that the players want a tight close turf for fairways and it will be up to us to see that they get it.

Common Turf Problems Persist

By LEONARD J. STRONG
Supt., Saucun Valley Country Club
Bethlehem, Pa.

The most important course maintenance problem in our part of the country, from the strictly turf viewpoint, is the infestation of poa annua, crabgrass and clover.

This has been the case since the modern standards of golf course were developed and every year these same turf problems confront the superintendents although various remedies and maintenance procedures are employed in the search for the right answers. There is no question but that continued research is necessary on these problems and must have high rating on the research programs.

One method found successful in checking crabgrass has proved to be much too expensive for average golf course use on large areas such as fairways. Another method used is the elimination of the seed by chemical treatment over a long period but this is a long-drawn-out process. This method is being applied to poa annua as well as to clover and crabgrass. The player pressure on superintendents and the research men is to get a quick cure for every trouble.

This past season, being the worst experienced in many years, presented a number of turf problems in addition to

those previously mentioned. The problems included brownpatch, dollar spot, melting out, copper spot, pink spot, pythium, helminthosporium and other diseases which are still unnamed.

In this section the superintendents have been having a busy fall renovating and putting their courses back into shape. In most cases they have been aerifying, spiking, seeding and fertilizing with hopes of a good growing fall to complete the job and have first-class turf for next year.

The theoretical aim of the superintendent is to discover maintenance procedures and preventive measures that will eliminate the problems to which the finely conditioned golf course seems to be heir, and to simplify maintenance to operations required for careful grooming. But with the uncertainties of weather, the mysteries of soil and plant growth, and the exacting demands of golfers upon one of the most peculiar jobs in scientific agriculture, there'll always be many problems in golf turf.

About the best we can do is to stay determined, thoughtful and diligent in trying to solve some of the most common problems which continue to plague us year after year.

Study the Limiting Factors

By WILLIAM LYONS
Supt., Firestone Rubber Company Courses
Akron, O.

The major and very difficult problem in golf course maintenance is that of discovering and adopting good maintenance practices that will reduce some costs so on the same budget more money can be allotted to hiring well qualified people.

The superintendent is hard pressed between higher labor costs and trying to keep the cost of golf low.

We are in a business. We have set our sights high with respect to the quality of our production. We must compete in the labor market for good labor. We must match business and industry if we are to command respect in and for the profession of golf course maintenance. And certainly in solving the problems that now confront the superintendent we will be able to say that we have exercised a type of business thinking that deserves respect.

In our thinking we have to study every phase of the course and of maintenance operations. One can't stay in this demanding profession on grandpa's methods now any more than a farmer can produce profitable crops with grandpa's antiquated methods. In modern farming I have to look at every problem with an idea of finding the limiting factor that

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ment. Dr. John C. Harper, III, working under the second Green Section Turf Research Fellowship, finished his work in June and, to the best of our knowledge, was the only Ph.D. in Turf Management produced in 1952. The new fellow is Miles F. Nelson. We sincerely believe that he will carry on the high ideals set by Jim Watson and Jack Harper. Musser's work with Merion breeder seed, polycross creeping bent, polycross creeping red fescue, and various management practices will be of value to turf people everywhere.

Rhode Island continues to grind out the data for the Northeast. DeFrance has some new bulletins on crabgrass control and weed-free seed beds. Now he is working on Merion bluegrass establishment and management, with a weather eye cocked for combination turf with warm-season perennials (Meyer zoysia, to be exact). The roadway traffic trials will prove to be mighty interesting.

At Tifton, Georgia, there is the greatest array of plots of warm-season grasses anywhere in the country. The latest development is Tifton 127 bermuda for putting greens — a cross between African bermuda and Tifton 57 bermuda. This grass looks and acts in a manner similar to bent grass. Dr. Forbes, now working with Dr. Burton, is continuing his studies with zoysia grasses which look more promising than ever before. Some of Forbes crosses appear to have a great future. Centipede seed has become available as a result of the cooperative work between the Tifton Station and the U. S. Department of Agriculture, and the Green Section. The real way to see the results of the work at Tifton, or at any other Station, is to attend a Turf Field Day.

Rutgers University, under Dr. Ralph Engler's direction, is conducting practical trials of management of bents, fescues, and bluegrasses. Attention is being given to the warm-season grasses in an effort to discover through research, their place in New Jersey's turf areas. The Green Section has furnished U-3 bermuda-grass and Meyer zoysia to the New Jersey Station for the cooperative work.

At Purdue we find studies covering a wide range of subjects, including bents, fescues, bluegrasses, a putting green in use on the campus, warm-season grasses combined with Merion bluegrass, crabgrass control, clover control, fungicide studies, and more. Dr. William Daniel is to be commended for his pioneering spirit and his courage to pursue the new concepts.

We cannot describe the work at each station but we do want to express deep appreciation for the excellent work in soils and irrigation at the University of California; the soils work at Stillwater, Oklahoma; the bermuda selections and bent

studies at Texas A. & M.; the weed and disease control at Ames; the studies of warm-season and cool-season combinations at the University of Kentucky; turf management studies at Michigan State College; and trials of species and strains at Middleburg, Virginia. Encouraging signs are beginning to come from Ohio and North Carolina suggesting that Turf Management is being considered as a part of the agricultural program in those states.

In reviewing the great job of research that men in turf are doing it becomes increasingly clear that, to make that research most valuable, we need (1) coordination on a national basis, and (2) a more effective Extension Service. Too, we need an expanded teaching program. In short, all three phases must go forward together. The big question now is, "Who can best accomplish the job of National Coordination on a continuing basis? When we have the answer to that one our total efforts will be infinitely more effective.

(To be continued in the January, 1953, issue of *Golfdom*)

COURSE PROBLEMS SURVEYED

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determines maximum crop production. As a golf course superintendent I must think along the same line of approach to solving the problem. For instance:

How are we going to feed greens a balanced plant food with the temperature near 90 and a foursome at every green every six minutes?

The answer, in meeting the limitations, was to use soluble fertilizer and spray it on with a power sprayer.

The results: 21 greens fed in 2½ hours by six men, at a total labor cost of \$28.16. The fertilizer cost was \$2.31 per green. There was no burning, no inconvenience to players. By studying weather information we can feed at the right time and actually reduce disease incidence according to our experience this past season when we only had to apply fungicides five times.

In the above operation we had almost \$4000 in machinery. Was it worth while? We have been using the machine for the past six years. We had 50 lbs. pressure at the hose end at every green. Our river water system is nearly 25 years old.

Always the pay-off in course maintenance is results, even though some of the determining factors are beyond the control of the superintendent. To decide what is within your control takes cautiously thoughtful experimentation and confidence in your decision.

I've been through that, too — as many other superintendents have been. After

the criticism I took from some because of an article "Softening Hard Greens" I wrote for GOLFDOM I might have shied away from expressing myself in print any more. But the results of the "816" sanding continue to bring only one complaint from our players—"Too much grass on the greens"—and the practice has been adopted with satisfaction by some of the earlier critics in course maintenance work, so can I doubt the wisdom of a practice that again has been successful during a very harsh season?

The results, this year, of the sanding procedure:

Up to 425 players a day on greens as small at 2500 sq. ft. Cups changed four times a week. No worn spots from heavy traffic.

Greens are washed and mowed seven days a week.

Sprinklers were on our public course greens (which is built on gravel) fewer than 10 nights, up to Sept. 12. Sprinklers were used on our private course greens fewer than five nights. On the savings in labor and water the "816" sanding has had a cash value to us this year of \$36 a ton.

Greens held even the lofted approaches of the 100-shooters. The customer satisfaction on our public course has been recorded by the cash register. On our private course the members are bragging about "our greens."

Soil samples show water is getting down and so are the grass roots.

Superintendents Plan for Atlantic City, Feb. 10-12

Details of exhibition space for the 24th National Turf Conference and equipment and supply exhibition of the Golf Course Superintendents' Assn. of America, have been released by the organization's sec., Agar M. Brown, PO Box 106, St. Charles, Ill.

The convention will be held at Ambassador hotel, Atlantic City, Feb. 10, 11, 12. Booths range in price from \$90 to \$216. Allotments are made on first-come, first-served basis.

The program committee, headed by Ed Casey, Supt., Baltusrol GC, Short Hills, N. J., and Brown, is working out a schedule to balance turf technical subjects and matters of golf course management. The GCSA during its 27 years has mainly devoted its formal programs to technical phases of turf development and maintenance, even when no conventions were held during some war years.

Results have been highly satisfactory to all concerned in improving standards of golf course maintenance. But of recent years the labor supply, financial, officials' and golfers' relations, and other executive

and management problems have become so pressing that a timely division of program subjects has been dictated.

As is very plainly shown in this issue of GOLFDOM the technical problems of the superintendents are as much under control as well organized research and its intelligent application permit, but the problems of management which depend on understanding and cooperation of officials and members are urgent and serious puzzles which must receive attention.

SE PGA Combines Play with Work; Cochrane Re-elected

Southeastern PGA, holding annual meeting at Memphis showed club-wielding skill in tournament played over Chickasaw's beautiful course. After being rained out first day the tournament proceeded with slim Charley Harper, Ft. Benning, Ga., with 11-under par, 277, leading the circuit star Cary Middlecoff by 6 strokes. Doc turned over his second place check of \$400 to the charity which sponsored the tournament. Joe Taylor, Pat Abbott, Broyles Plemmons, Dick Beckman, and Scuddy Horner, followed the leaders.

George Dawson, Spalding's VP in charge of sales, spoke on pro business operations; Robert Bruce Harris, golf architect of Chicago, talked on course design for interesting playability and economical maintenance; and Harold Sargent, national PGA treas., discussed pro problems in the business sessions.

Election of SE NGA officers was held.

Johnny Cochran, Greenwood, Miss., was renamed pres. Leo Beckman was re-elected sec.-treas., and Harold Sargent, treas., national PGA, was re-chosen honorary pres.

Vice-president from each of the six states in the SE PGA are: Tom Lundy, Mississippi; Denny Champagne, Florida; Joe Harper, Alabama; John Livingstone, Georgia; Charlie Danner, Tennessee, and Everett Nelson, Louisiana.

CORRECTION

A serious error in the table listing cost of materials used in connection with the article "Overseeding with Bent Helps Solve Texas Greens Problem," which appeared on page 46 of the September, 1952 issue is called to your attention to prevent possible serious damage. Third line from the bottom of the table which reads, "30 lbs. Calo-Clor Fungicide @ 4.95 /lb. \$188.50" should read, 3 lbs. of Calo-Clor Fungicide at \$4.95 per lb. or \$14.85. — The Editor.