

WHAT HAPPENED TO TURF THIS SUMMER

By FRED V. GRAU

DIRECTOR, USGA GREEN SECTION

As I write this in mid-August, I still can see the sick putting greens, the moth-eaten fairways and the goosegrass tees of so many courses in the East and Midwest. It was impossible to see all of the affected courses, but in talking with greenkeepers and superintendents at meetings it was evident that trouble was general. Now we are trying to encourage clubs to study their conditions and to correct the trouble at the source in order to guard against the same thing another year.

What Happened

On the Greens

Heavy compacted soil, with the inevitable poor subdrainage and lack of aeration, forced grass roots to the surface of the soil where they could get air. This developed a very shallow root system and produced a weak turf which was very susceptible to the diseases which were encouraged by the high temperatures and high humidity. In order to keep the grass living, it was necessary to water lightly and frequently, often several times during the day, to keep enough water in the shallow root system so as to supply the plants with moisture. This resulted in saturation of the soil. Then when heavy rainfall occurred, there was too much water and the greens were overwatered. A great deal of scald occurred when this happened which was virtually uncontrollable.

In some cases a thick, heavy dense felt mat of undecomposed roots, stems and clippings had built up over a period of years. This felt mat sometimes was from 1½ inches to 2 inches thick. It very effectively served as a blotter or sponge to hold moisture, and the grass roots grew only in the upper half-inch of this mat. Applied materials such as lime, fertilizer and others, could not penetrate this mat and remained concentrated in the upper thin layer of turf. The effect of this mat was exactly the same as a layer of clay, preventing the movement of air and water through the soil.

In several instances we saw where the soil had been aerated either with tubular tine forks, with the drills or with the Aerifier. The response of the roots to these practices has been remarkable.

Brownpatch has been especially bad, and it has been necessary under some conditions to treat the greens every night for five and six nights consecutively in order to keep brownpatch under control. Accompanying brownpatch has been copperspot, *Pythium* and *Helminthosporium*. When it was recognized, copperspot has been kept under control by the use of the cadmium fungicides. No treatments to date are known which will control *Pythium* and *Helminthosporium*.

The use of hydrated lime on the greens during these bad periods has proved its value this year. The occasional use of 3 pound of hydrated lime to 1,000 square feet, mixed with a few bucketsful of finely screened topdressing and broadcast dry on the greens, has pulled a lot of turf through.

Improperly contoured greens which had pockets where the water could not drain freely from the surface suffered badly. The tremendous importance of good surface drainage never was more clearly demonstrated than this summer. The same thing can be said of air drainage. Pocketed greens completely surrounded by trees and shrubs were extremely difficult to keep.

On the Fairways

The fairways that suffered most this summer were those that contained a high proportion of *Poa annua*. Fairways that had been established to bentgrasses suffered little or not at all. In walking over many fairways this thought continually occurred: "Where there's bent, there's turf."

The *Poa annua* died principally from the effects of high temperatures, high humidity and disease. It is an annual grass which protects itself by producing large quantities of seed in the spring, so that if it is killed during the summer,

it can return by way of the seed that has been produced. There is little use lamenting the loss of *Poa annua* because it is an unstable grass. During a cool, moist season *Poa annua* fairways may remain good throughout the season. Since it is so unreliable the only sound program is one of discouraging *Poa annua* and replacing it with better grasses. At the present time bentgrasses seem to be the best we have.

On the Tees

Many tees became infested heavily with goosegrass or silver crabgrass this year. The grasses on the tees suffered just as they did on the greens and fairways and from much the same causes. Goosegrass is able to grow on extremely compacted soils without any irrigation. Its presence is a clear indication that the grasses which we have been using on the tees are not able to give us continuously good turf and to crowd out the goosegrass and other unwanted weeds.

What To Do

Now, more than at any time previously, the value of a planned program is recognized. Each turf area on the golf course must be studied individually and according to its needs. Some greens will require complete rebuilding so that adequate subdrainage can be installed and so that the topsoil will be sufficiently sandy to insure continued internal drainage and aeration. Surface contours must be changed to eliminate pockets. Intercepting tile in some cases must be laid to prevent seepage water from coming up into the greens. Better grasses may be needed to replace the weak grasses now in use.

Greens that are architecturally sound but suffer only from a compacted layer may be kept in play and may be improved through the intelligent use of aerating equipment and by the continued use of topdressing materials which are high in sand content. Careful attention to water management will pay big dividends. In the words of one of the leading superintendents: "I never realized

COMING EVENTS

- Sept. 7-8—Turf Field Day for Greenkeepers, Rhode Island State College, Kingston. J. A. DeFrance.**
- Sept. 9—Lawn Turf Field Day, Rhode Island.**
- Sept. 26-27—Turf Field Day and Golf Tournament, Pennsylvania State College, State College, Pa. H. B. Musser.**
- Oct. 19—National Turf Field Day, Beltsville Turf Gardens, Plant Industry Station, Beltsville, Md., on U. S. 1, three miles north of Colledge Park. Fred V. Grau.**
- Oct. 24-28—American Society of Agronomy Annual Meeting, Milwaukee, Wisconsin. L. G. Monthey, 2702 Monroe Street, Madison 5, Wisconsin.**
- 1950**
- Feb. 27-Mar. 2—Nineteenth Annual Turf Conference. Pennsylvania State College, State College, Pa. H. B. Musser.**
- Mar. 6-8—Midwest Regional Turf Conference, Purdue University, West Lafayette, Ind. G. O. Mott.**

before how little water it takes to grow good bent." There has been a regrettable tendency to overwater turf. This has been caused partly by the demands of players to have green turf and soft turf that will hold practically any kind of a shot. Firm, dry turf can be even more enjoyable from the golfing standpoint, and the grass certainly will be healthier.

Tees and fairways will benefit generally from a program of aerifying, fertilizing and seeding to better adapted grasses. The use of sodium arsenite in connection with a program of renovation has much to commend it. In practically every golf district there have been those pioneers who have used sodium arsenite in connection with a renovation program, and the results speak for themselves. The information has been provided in articles and lectures in practically every turf publication.

Careful consideration should be given to the use of the summer-growing grasses such as Bermuda and *Zoysia*. These grasses are proving themselves in trouble areas such as Philadelphia, Washington, Cleveland, Chicago and St. Louis. Every effort should be made to study conditions on other golf courses and to take advantage of the research findings at

experiment stations. Mimeographed copies of talks at the winter conferences should be reviewed. Plans for long-range improvement should be drawn and presented for approval by the board of directors. In the words of the philosopher: "Let us learn by the mistakes of others because we won't live long enough to make all of them ourselves."

BENTGRASS IN THE SOUTH

By FRED V. GRAU

DIRECTOR, USGA GREEN SECTION

The subject of many discussions among the locker-room quarterbacks these days is: "Will bentgrass ever be successful in the South?"

Many incentives for the arguments come from the recent establishment of bent greens at the Indian Creek Country Club in Miami Beach, Fla. Since they were successful and since few golfers are correctly informed, there is a great deal of puzzlement that the greens are to be reconverted to Bermudagrass and ryegrass. This discussion is in the interests of setting the record straight and to state the policies of the USGA Green Section on this controversial point.

A well-maintained bent green represents the ideal putting surface for most golfers. After enduring rough, slow, bumpy Bermuda greens, any golfer naturally would prefer to putt on well-kept bent greens. Golfers are not agronomists, and adaptation of grasses to climate is the least of their worries. What they want is good golf and good turf.

This logical reasoning led the Brook Hollow Golf Club in Dallas, Tex., to install bent greens, and it still has them. The Colonial Country Club in Fort Worth, Tex., installed bentgreens, and in spite of reverses and troubles, it still has its bent.

Since then, all the new courses in Dallas and Fort Worth have installed bent greens. Many of the old courses have destroyed their Bermuda greens and

have converted their greens to bent. The same situation exists in Tulsa and Oklahoma City, Okla. It is true that there have been some difficult times and there have been severe losses during unfavorable weather conditions, but not one club in that area has reverted to Bermuda after it had bent greens.

The Indian Creek Country Club in Miami Beach is an exception. Under the capable supervision of O. S. Baker, veteran greenkeeping superintendent, and with the encouragement of Mr. Molloy, manager, bent greens were established two years ago. It was an uphill job because the soil conditions had to be extensively altered. The watering system required considerable revision, and the common Bermuda had to be destroyed. It was a costly but successful operation. During a visit to the club in April, 1949, the writer pronounced the venture completely successful and stated that, under the supervision of a man who knew bentgrass, it would continue to be successful. The abandonment of the good bent greens at Indian Creek Country Club was on the basis of cost more than anything else.

Regardless of the location of bent greens, such greens will be no better than the ability of the superintendent in charge. Under mild weather conditions mistakes can be made without severe penalty. Under the brutal summer weather which occurs in Texas, Washington,