Spring floods caused much damage to courses along the upper Mississippi and in northern California, Colorado and Oregon. A Davenport, Iowa, course faced complete rebuilding job.

Few cheers for THAT year!

Floods, hurricanes, drought caused much damage, but crabgrass belt never had it better.

By CHARLES G. WILSON
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What happened to spring? As one northern superintendent told us: "This was my first year to take a winter vacation in Florida. I goofed in not taking the grass with me." The poet, Jones Very, wondered what happened to "spring's early flowers" a century ago.

"I looked to find Spring's early flowers,
In spots where they were wont to bloom;
But they had perished in their bowers;
The haunts they loved had proved their tomb!"

What Very would have penned in the Spring of 1965 we shall never know, but there certainly was enough tragedy in turfgrass circles at that time to spur on the most laggard of poets.

Spring flood damage was intense along the upper Mississippi and in northern California, Colorado and Oregon. The municipal course in Davenport, Iowa, was faced with a complete rebuilding program when the waters receded. Other flood plain courses suffered as badly, or to a lesser extent. Oregon was especially hard hit, and the rains returned again in fall to damage courses as far south as San Diego. Hurricanes also took their toll of turf in Florida and Louisiana, especially where salt water inundated

playing areas. Gulf Stream was hard hit. There, only Otto Schmeisser's paspalum planting withstood the high salinity in fairways. It actually seemed to thrive on the added salts.

The Northeast continued through another year of unprecedented drought. Water restrictions were imposed in many areas and some courses had to fight for enough to keep tees and greens moist while letting the fairways go. The water restrictions resulted in more complaints about fairyring disease than ever before. These fungi desiccate turf rapidly in the familiar irregular rings where lack of water is limiting growth on thatched areas. A possible blessing in disguise was the reduction of annual bluegrass and deeper root system where water restrictions prevailed.

Even Kentucky bluegrass failed to grow properly in the northern Midwest and parts of Canada last spring. Opening day was delayed three weeks or longer. Normally, winter killed *Poa annua* comes back fast from fresh germinated seed in the soil. Such was not the case in spring, 1965. Growth was poor from Milwaukee, north, until late May because of cold weather. Fortunately, when good weather came, growing conditions were also good, although wet in the Midwest throughout the summer.

Summer temperatures were mild in notorious trouble spots in the lower Midwest and the Eastern crabgrass belt. Oscar Bowman at Old Warson summed it up best of all with the statement: "If you couldn't grow bent greens in St. Louis this summer, chances are you never will." The temperature and/or management changes also benefited U-3 bermuda fairways. They were never better and the superintendents seem to be getting the upper hand on spring dead spot by growing turf rather than hay. Now this dread malady has spread to Tennessee, the Carolinas and Georgia. Golf courses there should watch with interest Missouri's efforts to combat this so-called disease by management. This spring may tell the story. Budgetwise, it won't be as expen-

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Another year of unprecedented drought was experienced in the Northeast. Many areas were under water restrictions and as a result there was a new high in fairyring complaints.

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sive as costly disease sprays, if it works.

The South is looking with interest on a new grass that may replace Tifgreen on putting surfaces. Called "Tifdwarf," it seems to be an off-type vegetative mutant that was found almost at the same time at Sea Island, Georgia, and Florence, South Carolina. Burton at Tifton reports Tifdwarf, after three years of testing, has several advantages over Tifgreen. Like Tifgreen, it must be planted vegetatively but outranks it in putting qualities. Tifdwarf may turn purple in color with the first frost because of a high content of anthocyanin pigment. This can be offset with winter overseedings.

Speaking of overseedings, 1965 was the first year of recognition that "other crop seeds" may be causing many of our turf weed problems. Seed laws were made to protect agriculture. Noxious farm weeds seldom bother the golf course. They vanish with close mowing or can be readily removed with 2, 4-D and related herbicides; it is the "other crop seed" that can cause trouble in turf areas. New York has found many lots of cool-season grass seed to be contaminated with *Poa annua*. Juska at the U. S. Dept. of Agriculture reports foreign Kentucky bluegrass imports to be especially high in this pesky weed. By law, New York now insists the number of *Poa* seeds be listed on the tag. Other states are following suit, because U. S. production may have annual bluegrass as a contaminant in Kentucky bluegrasses, bents and fescues.

Today, in the northern belt, we still wonder what whims of nature prompt wholesale winter loss of turf in some locations, while others a few miles away come through in good condition despite a similar climate.

Certainly, climate, which is an average of weather happenings, doesn't give us the answer. Averages often are misleading. At their worst, reliance on weather averages could be harmful. It is rather like encasing one foot in ice and submerging the other foot in boiling water to obtain human comfort. On the average, it should work. So should planting cool-season grasses for year-round play in Miami, work on the average. The winter climate there is 69° F., with summer a balmy 78° F. Although ideal on the average, it just won't work. Indian Creek found this out in the late 1940's when they tried to grow bent greens on a year-round basis.

One day we shall know the weather extremes that are responsible for winter loss of turf. Michigan Turf Scientist Jim Beard is working on causes of winter failure. Toro Manufacturing Company's Jim Watson has shown us how plastic covers can be used to protect the grass. At Purdue, Daniels is working with heat cables and waxlike coatings to keep grass growing in cold weather and to retard drying out. Iowa's Roberts is researching nitrogen source influence on winter hardiness, while Keene at Kansas is developing more winter-hardy grasses through breeding and selection. Other turf researchers are making equally significant contributions that will make headlines.

Once we know the "why's" of winterkill, the corrections will be easy. Until then, those that protect the turf will fare the best. Fungicide should be applied to prevent snowmold on bent and *Poa annua* grasses, especially the greens. Precautions must be taken to prevent desiccation, and ice should be removed in spring, if it is bonded to the grass.

Annual bluegrass is the most treacherous winterkill species of all. A few northern resort courses still rely on *Poa* because play doesn't start until it has had a chance to recover. Those faced with more normal play should be doing everything in their power to replace *Poa* with more desirable bentgrasses. The old standby of pre-emerge treatment with lead arsenate still works well for some. Many Iowa courses still spray lead on greens during the summer to check existing *Poa* on a post-emergence basis. They include 1 to 2 ounces of lead arsenate per 1,000 sq. ft. with their fungicide program.

Calcium arsenate is still being used successfully on bent fairways, but at lower rates than first suggested by Purdue. Ed Riley, Manufacturers' Club, Philadelphia, has had amazing success with this product. Soil reaction seems critical with this material. The pH should be around 6.5, only slightly acid. Results

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have been unfavorable in some instances on very acid or alkaline soils.

Pre-San and/or Betasan show promise as a *Poa annua* control. Dr. Burt in Florida recommends it along with other materials for pre-emergence control on Bermuda where no overseeding will be done. Pre-San was certainly inhibiting *Poa* recovery on two test greens in western Iowa last spring. Unfortunately, bent coverage was poor, so lots of bare ground existed where the chemical stopped *Poa* from germinating.

Pre-emergent chemicals are dangerous unless a good stand of desirable grasses is present. Dr. Engel at Rutgers reports some chemicals inhibit root development of the good grass as well. They make the desirable turf more subject to drought injury. This calls for more frequent watering to prevent wilt. Frequent irrigations or too much water are credited by several turf experts as being a major cause of the *Poa* problem in the first place.

All of the foregoing emphasizes the need to test new materials under actual golf conditions before embarking on an overall program. Each course should do this on its own, relying on experiment stations and manufacturers' research for leads, instead of the gospel truth, as to what might happen.

In Milorganite Turf Bureau tests, new materials are applied at one-half; the recommended, and double the recommended rate. Plot size need not be large. We use 4′ x 10′ plots as a standard, and try to replicate these three rates under different growing conditions on the same course. Wet vs. dry areas, heavy vs. light traffic, different grasses and different heights of cut add to the worthwhile information. Fall vs. spring treatments often give drastically different results.

The start of any new year with many golf course superintendents coincides with their annual meeting. This has been held in late January or early February. Some suppliers claim superintendents do most of their buying after attending this

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great show. Thus, the G.C.S.A.A. International Conference with some 2,000 in attendance is important to golf course economy turfwise.

This year, "The Greatest Show on Turf" was scheduled to be held in Kansas City, February 13-18. In addition to the latest and best of material displays, the educational part of this show should be second to none. Leading turf scientists and superintendents from everywhere will report on turf developments.

Last year's conference ended on a sad note. Mr. R. E. (Red) Lambert passed on shortly after returning home from Cleveland. Red was one of the unsung heroes of the superintendent's profession. He served as president, but was best known to the informed as comptroller. Red, possibly more than anyone, assured financial stability in the G.C.S.A.A.

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1965 will be remembered as the retirement year for past G.C.S.A.A. Superintendents, Carl Bretzlaff, Mal Maclaren and Chet Mendenhall. All admirably represented top clubs in Indianapolis, Cleveland and Kansas City, respectively.

1966 should be the most promising golf year of all. The economy is booming. Private clubs will have more money, thanks to tax cuts. New U.S.G.A. rules should speed play and golfers will have more leisure time to enjoy their game. The golf course superintendent will have trouble hiring decent labor. The golfing reader can also expect floods, tornadoes, ice storms, weird new diseases, bugs and sticky weather to again kill turf. Wherever this happens, the superintendent needs and deserves sympathy rather than recriminations. No one has done more to match turf playing qualities to the golfer's enjoyment of his game.