Golfdom
The Business Journal of Golf
REG. U. S. PATENT OFFICE

VOL. 5 OCTOBER, 1931 NO. 10

Clues to Turf Miseries of 1931 Make Greensmen Deep Thinkers

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EVERY GREENKEEPER heaves a sigh of relief when he realizes that another summer, with all the worries that go with it, has passed. There is always more or less injury to fine turf on golf courses during the extreme summer weather and usually some particular area of the country gets more than its share of turf trouble.

This summer has probably set a record for the wide extent of putting green turf injury. It has not been uncommon to hear greenkeepers from such widely separated points as Chicago, Boston, St. Louis and Richmond describing almost identical turf injury. For many clubs it has been the worst summer in their history, as far as the maintenance of good putting turf is concerned. With the possible exception of the far west and certain portions of the northern tier of states, few clubs which maintain northern grasses on their courses have been entirely free from turf trouble.

The summer of 1928 will not soon be forgotten particularly by the greenkeepers of the East. The summer of 1928 was excessively hot and humid along the northeastern coast and the turf on many fine putting areas was badly injured or entirely lost. The 1929 summer was an average one, but 1930 brought us a summer which established heat records throughout the whole country. Strange to many is the fact that very little trouble was experienced in maintaining turf during the 1930 summer season. Records show that over the country as a whole we did not have as high temperatures this summer as last, but that there was a considerable increase in the humidity. The experience of the eastern greenkeepers during the hot, humid summer of 1928, and of the greenkeepers over a much wider area of the country during this hot, humid summer compared with the slight turf injury of the hot, dry summer of 1930 will give us a possible clue to the reason for much of this summers' turf ills.

Cooperation Improves Methods

From personal observation made throughout the stricken area and from reliable information received, it is, however, quite apparent that there were types of injury which were in all likelihood influenced by last year's drought. Also judging by information regarding cultural practices received from the greenkeepers, it is apparent that much excessive injury to putting green turf could have been avoided if more thoughtful cultural practices had been followed. It is indeed pleasing to note that many greenkeepers have been willing to cooperate for the good of the cause and for their own benefit, by disclosing an accurate account of their season's maintenance work, even though such disclosures may lay them open to criticism. With such reliable information at

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hand, it is possible to draw conclusions which may well prove constructive by indicating certain putting green maintenance methods which should be followed and others which should be discarded in order to decrease the likelihood of such severe summer injury in the future.

We are told by entomologists that the excessive insect injury on fine turf last year and this, was largely due to last summer's drought; that the adults of various potential golf course insect pests were either forced or guided by parental foresight to lay their eggs in the comparatively soft and succulent turf of the golf courses, rather than in the withered, hard turf of the pastures and waste lands. It seems that some of these insects instinctively lay their eggs in sod which will provide good foraging for the larvae, while others are influenced by personal taste, since it is exceedingly difficult, if not impossible, to force their ovipositors into hard turf. This explanation is generally accepted and in any event last year and this brought much more insect injury to turf than normally.

Sod Web Worm on Warpath

Injury from white grubs and Japanese beetle larvae was not more than usual since in areas where such injury is to be expected, the clubs had taken the necessary precautions. Last year was a bad one for cut worms on golf course turf, and greenkeepers who had experience with these pests last year had little trouble controlling them this summer. However, the sod-web-worm, which did considerable damage in some sections last year, continued its depredations and extended its activities to other areas.

In many cases injury laid to turf diseases, drying out, or to cut worms, was in reality due to the activities of the sod-web-worm. The ordinary poison soil treatments usually used for pests which work in the soil, failed to control the web-worm, which does its damage on the surface, and hence requires a different method of applying the insecticide. The *Bulletin* of the U. S. G. A. Green Section refers to sod-web-worm injury on putting greens as early as 1923, but it has only been in recent years that the web-worm has become of sufficient importance on golf courses to require special attention to control methods.

Brown-patch is an old summer complaint and was usually recognized. However, the number of greenkeepers who forsook the standard remedies and jumped at new panaceas was surprising. Brown-patch was more active than usual due to the heat and abnormally high humidity, but those who kept their heads and applied the tried remedies and cultural practices with determination and increased care, were in most cases able to keep it under control. There were some who, becoming panicky at the virulence and persistence of the disease, forsook the tested remedies and tried everything good or bad with disastrous results.

Blame Pythium Loosely

Pythium, a disease named after the fungus organism which causes it, did much damage in certain cases, but as with the insects, this disease was also much overplayed, since, when all other diagnoses failed, it proved to be a magic word with which to explain away the incomprehensible turf damage. Pythium did considerable damage in the summer of 1928, but in 1929 and 1930 did little damage. This year it came back strong. The summers of 1928 and 1931 had much in common, for

at some period or another there were days and nights of intense heat and oppressive humidity. Apparently pythium requires such extreme conditions to make it active in putting turf. Changing weather quickly checks this disease and hence in normal summers the disease does not get far even if it should start.

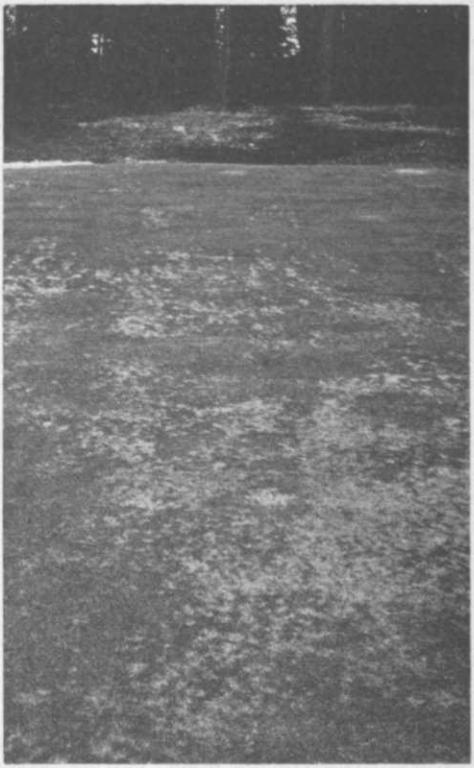
Pythium having made its appearance on some courses was not recognized as such. The usual fungicidal treatment did not check it with the result that some ordinarily calm beings lost their customary poise and became rather erratic with their cultural practices. Overwatering and fertilizing greatly increase the susceptibility of turf to pythium, but in a good many cases these were not factors, since the putting greens were situated in locations where poor air circulation greatly increased the humidity. Other greens were poorly drained, which aided in maintaining the high humidity as well as increasing the susceptibility of the turf to disease by its ill effect on the plants.

Of course there was the usual amount of injured turf caused by the lack of moisture on the high terraces, mounds and edges of putting greens. These areas are usually topped with poor soil which becomes packed and hence it is almost impossible to get enough water into the soil to sustain the turf through the extreme heat. An effort to wet the soil on these areas usually results in flooding the low areas of the putting green which in turn kills the turf in these areas by oversaturation. This is a common summer problem and putting greens should not be built with such extreme slopes and mounds. Some greenkeepers, unfortunate enough to have such conditions to contend with, helped to some extent by forking these hard areas and by working sand and organic matter into the holes thus made. It was also found to be helpful to allow the grass to grow longer on the sharp edges and mounds surrounding the putting surface.

Layer Construction Dangerous

Under the extreme conditions of this summer there was an increased amount of turf injured due to the practice of building greens with layers of various materials. Even a thin layer of pure sand or peat buried beneath the surface is for various reasons harmful to the turf, especially in extremely hot weather.

The injury on other putting greens was due to the accumulation of too dense a nap. The successive burying of a heavy nap by topdressing in time forms a layer on the surface of the green similar to a thatched roof. It is difficult for the roots of the young plants on the surface to reach the soil and they become unhealthy. Also under conditions of humidity and heat this layer often commences to rot which, of course, ruins the surface.



Many diagnosed pythium wrong, but this is a bad case and no mistake.

Some species of putting green grasses normally weak in summer proved altogether unable to withstand the continued heat and humidity of this summer. The most important of these was *poa-annua*. In some sections *poa-annua* dies or "goes out" gradually as the hot weather approaches and other more vigorous summer putting green grasses, such as the bent grasses, replace the disappearing *poa-annua* plants rapidly enough so that some sort of putting surface is maintained. In other sections, such as the Chicago area, *poa-annua* usually remains, although in a somewhat weakened condition throughout the summer.

Poa-annua can apparently withstand heat, but it cannot withstand a combination of heat and excessive humidity. Hence it was

not uncommon for *poa-annua* to die almost overnight this summer, leaving large bare areas on the putting greens. In mixed greens, as a rule, the bent patches were uninjured with bare areas between them in which the *poa-annua* had previously been in possession.

Season Endorsed Chosen Bents

This summer *poa-annua* was not the only putting green grass to suffer; some beautiful bent greens also fell victim to this phenomenon or condition. Colonial bent suffered more than usual. Often the disappearing *poa-annua* left the Colonial bent unprotected, and hastened its departure. Poor strains of creeping bent became much poorer than usual and the turf in some cases weakened beyond recovery. Weak strains of velvet bent in mixed bent greens found the conditions too severe and passed out. The recognized good strains of creeping bent withstood the severe conditions of this past summer better than any other putting green grasses.

This summer brought out one fact in particular. All through the wide area of turf injury it became increasingly apparent that the various strains of creeping bent generally recommended for putting greens were remarkably vigorous and free from injury compared to other putting green grasses. Mixed bent putting greens often referred to as seeded greens, have many points in their favor and may produce better putting turf under certain conditions; however, the fact remains that the creeping bent greens evidently were better able to survive the conditions encountered this summer.

Many comparatively well constructed greens with well established turf of mixed bents or of good strains of creeping bent were injured this summer due to an effort to maintain these greens during the summer in the same beautiful soft lush condition in which they are kept during the spring and fall. That it is a mistake to try to keep putting greens during the summer in a luxurious fast growing condition, possible in the spring and fall, by heavy fertilizing and frequent watering has been satisfactorily demonstrated this summer. Everything considered putting greens kept half starved during the late spring and summer and watered carefully so that the surface soil was not continually saturated to the exclusion of air were found to come through the summer with much less turf injury than those kept in an unnatural condition.

Manufacturers Report on Golf Goods Credit Standings

LATEST QUARTERLY report of National Association of Golf Club manufacturers and Golf Ball Manufacturers' association shows $432,654 owing these manufacturers for six months or more by dealers, pros, clubs, driving ranges, miniature courses, etc. Accounts of less than $25 are not considered in the report. Accounts in the $200 to $500 class constitute greatest section of delinquents, 28.43 per cent. Slightly more than 47 per cent of the accounts are under $500. Pros and other retail outlets have about same per capita delinquency.

Improvement in the pro position is looked for this season as the manufacturers are getting after the pro delinquents who are unattached. Furthermore, attached pros have been clearing out stocks at price reductions and by strong selling efforts this indicates that most of the pro stocks will be turned into cash before the season ends. Toughest spot in the pro business has been with the pros whose clubs do not collect for them. When these pros go strong after collection of accounts personally from their members it frequently means the pro is working himself out of a job. Too rarely club officials stand up for the pro who is trying to get what's owing him so he can pay off his manufacturer creditors.

There is some talk of the manufacturers' association preparing a credit rating for all pros and making this rating available to suppliers who are not members of the club and ball associations. Such a rating will give credit standings of all pros rather than be confined to list of delinquents on books of associations' members which is the present method.

New Jersey Fall Field Day Scheduled for October 5

ANNUAL FALL field day on grass culture, jointly sponsored by the N. J. State Golf ass'n, the N. J. Greenkeepers' ass'n and the N. J. Agricultural Experiment station, will be held October 5 at New Brunswick, according to word from Howard B. Sprague, agronomist of the experiment station. The entire program will be devoted to problems of turf management. Several well-known speakers will present informational addresses.