

EXCESS RAIN IS TURF MENACE

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AS LAST season ended, torrential rain was the outstanding maintenance feature of the year in many sections. Both the spring and summer seasons were abnormally wet. Spring rains caused no visible damages aside from preventing deep root development, and clover encouragement in fairways. But successive heavy downpours during hot summer months played havoc in many districts, whereas close-by rainfall was often so nearly normal that courses were in perfect condition.

Because of these striking nearby contrasts, some greenkeepers received severe censure for bad turf when their methods were perfectly sound. Members blamed them because they did not know or recognize the wide difference in local weather conditions.

Courses in the Metropolitan New York district and adjacent areas, were among the real victims. After a week or more of constant rains, courses were deluged with flood waters on July 23rd. From 5 to 7 inches of water are said to have fallen that day. Consequently, many of the low fairways were transformed into lakes for a week or more, and side hills remained sopping wet for days as a result of seepage waters.

Little or no damage results from overflowing water in the cooler spring or fall season, but when this occurs in mid-summer, it is beyond the power of man to prevent damage. Furthermore, when tragedy overtakes turf in July, worthwhile recovery seldom begins until temperatures moderate in early fall.

Loss of grass results from a variety of causes. Roots long deprived of air soon die, and death of tops inevitably follows. Heavily matted grass always fares badly

As an indication of how John Monteith, Jr. of the USGA Green Section is kept hopping about to meet member club demands for his services, his mid-summer consultation trip last year kept him in a Pullman berth 15 nights out of one 17-day swing from Washington as far south as Atlanta, southwest to Tulsa, and north to the Twin Cities.

In the day time he was able to relax—that is if you consider inspecting golf courses and addressing 16 group meetings in day and evening sessions, any part of relaxation.

in hot, wet periods. Brown-patch and other diseases run rampant in grass which is sopping wet, and fungicide treatments, which are otherwise effective, become questionable in periods of heavy rainfall.

Around New York, greater damage to fairway turf is the striking contrast between last year and 1928. More water fell in a shorter period, so surface runoff was unable to cope with the abnormal volume of water. Besides the inevitable



Among the turf experts who attended a New Jersey course superintendents meeting held last fall at Hackensack CC, Oradell, N. J., were (l to r): O. J. Noer, Milwaukee Sewerage Commission; T. C. Longnecker, N. J. Agricultural Experiment Station; E. E. Evaul, U. S. Bureau of Soils.

damage in the submerged lowlands, much grass was lost along seeping slopes and sidehills, and even on high fairways injury occurred in pockets and depressions which held water. Although the behavior of bent was disappointing in many instances, there is no better substitute for wet locations at this time. Despite general misgivings, similar loss of bent is not likely except in the occasional abnormally wet year. Aside from these times, bent will certainly withstand more moisture than fescue or Kentucky bluegrass,

the other permanent turf forming grasses. Pure bent fairways require closer cutting than bluegrass or fescue. Unless this is done, a deep surface mat forms. When this occurs, grass rots out in wet years, and in dry seasons thatching of the grass prevents water penetration, so grass dies for want of moisture.

In some instances, when water subsided, afflicted fairways were cross-disc'd and treated with light doses of hydrated lime. It was hoped discing would speed removal of surplus water; that the hydrate would check algae and prevent formation of deleterious products during decay of the surface organic debris.

Opinions varied regarding benefits. Aside from controlling algae, no other benefit could be expected when all grass is dead, but it is reasonable to expect improvement where some semblance of life remained.

Remove Dead Grass Before Re-Seeding

In areas where grass was killed completely, there was no alternative but to re-seed. It is seldom possible to sow seed in a surface mat of dead grass, and obtain a satisfactory stand. Either this objectionable mat must be removed, or an alfalfa and grass disc seeder used. The discs cut through the surface mat, and seed is deposited in the slit formed by each disc. Cross seeding is necessary for best results. Besides economizing on labor, this machine saves seed also.

In the memorable year of 1928, damage to greens was widespread, irrespective of location, whereas last year serious loss in New York was confined to greens badly situated with relation to drainage; more particularly when heavy surface run-off and excessive underground seepage occurred. Even the best of grasses cannot remain sopping wet and survive for long.

A few greens gave trouble for the first time in years. These were located on hill-sides, near the crest of the slope, with no break between the putting surface and the adjoining slope. Last year surface run-off was sufficient to keep greens wet and cause trouble. A shallow, gently sloping runway between the green and slope would have diverted most of the water and thereby reduced the possibility of injury.

Greens with a heavy surface mat of grass fared badly. The thick mat became

John Morley, founder of the National Association of Greenkeepers, and for 26 years greenkeeper at the Youngstown (O.) CC, was given a watch by the Ohio PGA on his 71st birthday. It was an especially happy recognition of Morley's able and persistent work in selling the idea of the pros and greenkeepers being a team for the good of the game instead of being at cross purposes because of individual considerations.

saturated with water and grass then rotted. While the situation is hopeless in a wet year, in dry seasons heavily matted grass can be maintained. The secret is to apply water whenever grass begins to wilt, so the price of thatched surfaces is eternal vigilance and enough man-power to water during daytime whenever necessary. However, since too much grass is objectionable from the standpoint of the golfer, as well as good management, its removal and maintenance of tighter turf is the obvious answer.

On some greens, turf was ruined by tree roots penetrating into the green. Elm, maple, poplar and other similar trees with spreading root systems are the offenders. Their roots permeate the soil to a depth of several feet and utilize all the available water to that depth. While some blame tree roots for depriving grass of needed food, their effect on soil moisture is far more important. When soil is dry to a depth of several feet, surfaces become exceedingly hard, grass thins out, and applied water does not penetrate. Then algae covers the surface.

Removal of the offending tree, or trees, is the obvious permanent solution. The other alternative is to sever the offending roots by trenching between the tree and the green. Some claim tar paper and fine copper screening placed along the face of the trench retards re-entry of roots into the green.

Forking Fails When Soil Becomes Dry

When soil becomes bone dry to a depth of several feet, even deep forking followed by thorough drenching is not effective. It fails to remoisten the deeper soil. Unless moisture is restored throughout the dry zone, faulty drainage may be suspected, because the dryer layer underneath prevents downward movement of surplus water. Sometimes the surface soil becomes so dry that it is impossible to insert the fork tines.

A sub-irrigator, such as is used for

trees, is excellent for restoring moisture to the deeper soil, and simplifies elimination of localized dry spots. Penetration to depths of several feet is simple, even in soil which is too hard and dry for forking. After soil moisture is restored, the area can be hollow-tine forked quickly, if necessary, preliminary to the introduction of better textured soil by topdressing.

Early morning watering was more than vindicated in some districts, where heavy downpouring rains occurred mostly in early morning. With night watering, grass received double doses, but with early morning watering irrigation was omitted on showery mornings. Likewise, hand-watering in July and August was vindicated on heavily contoured greens.

When serious trouble occurs in midsummer, the tendency is to try hypodermic measures. Rather than be stampeded into somebody's panacea, it is more sensible to do the few simple things which will assist recovery, and to formulate plans for longer-time improvement to be started later.

When grass thins out from excessive moisture, forking or deep spiking to speed water disappearance is helpful. A light application of hydrated lime is beneficial, also. It retards algae, and seems to speed recovery. When grass begins recovering the surface soil must be kept barely moist by frequent light hand waterings, otherwise new roots will die and then further recovery does not occur. After grass is well started, light feeding can begin again.

In formulating the long time program, the necessity for improved drainage comes first. This applies to surface as well as underground water.

Possible need for improved soil structure, better grass varieties as well as changes in water, fertilizer and disease control practices should be canvassed also.

USGA Announces Green Section Will Issue Monthly Turf Publication

THE USGA Green Section resumes publication of a permanent periodical beginning with the January, 1939, issue. The new publication appears under the title, *Turf Culture*.

Those who followed the old Bulletin of the USGA Green Section, which was discontinued with the completion of the 1933 volume, will be surprised to find the

change in size and general appearance of the new publication. It is a pocket-size issue of the type of Readers Digest and several other popular magazines. The cover page includes a table of contents which should make the material more readily available for future reference.

The scope of *Turf Culture* is broader than that of the old Bulletin. It is pointed out that while some of the problems of maintaining turf on putting greens are limited to golf courses, the big majority of the problems encountered, especially in the fairways and rough, are common in the maintenance of turf for lawns, parks, sports fields, cemeteries, airports, etc. The material in the periodical although retaining the same interest and educational value to those in charge of golf course maintenance, should prove useful to those who are maintaining turf for many purposes.

In a general way the subject matter in each issue will be divided into three groups, the first and principal one of which will include original contributions. The second section will be devoted to a review of literature dealing with turf. Here the Green Section will endeavor to keep its readers informed on all recent developments that appear to have some bearing on the problem of maintaining turf. It will draw on both American and foreign publications. The third division will include a collection of questions and answers.

Wherever practical the major papers in any one number will be centered around one particular subject. The first number will be concerned primarily with weed control by means of chemicals. As in the old Bulletin, the new publications will contain no advertising.

Cooke to Head WGA—Leslie L. Cooke, of Bob O'Link GC (Chicago distr.) is slated for the presidency of the Western Golf Association when that body meets Jan. 6 in Chicago for its annual meeting. Running mates are: T. C. Butz (Exmoor) and Jas. L. Girard (Indian Hill), vice-pres.; John G. Searle (Glen View) secy; W. T. Woodson (Flossmoor) treas.; Carleton Blunt (Glen View) general counsel; and E. B. Babcock (Los Angeles), Ben Ames (Okla. City), E. B. Roberts (Cantebury), J. Harvey Irwin (Eastlake), and T. P. Heffelfinger (Minikahda), directors.

While voting is limited to club delegates, all members of clubs belonging to the WGA are invited to attend the dinner and annual meeting.