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One-man System

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Better turf...

with...PREMIER
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The McCormick-Deering Fairway Tractor owned by the City of Chattanooga, in front of the clubhouse on the municipal golf course.

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"The McCormick-Deering Fairway Tractor which we bought some twenty months ago has proved to be our most valuable purchase of equipment since opening our course six years ago. Previous to buying the Fairway I used a small tractor which could only handle three sections of the five-section mower. The Fairway Tractor handles the five sections and also the mower for cutting the rough. I haul all the compost for top dressing and do all other hauling with the Fairway. It has allowed me to dispense with a team of mules and one man, thereby saving the course a goodly sum of money. If it's power I need on our course I always use the Fairway.

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31 Years...

Look back to the automobiles and locomotives of 1900, 1910 and 1920. Think how alloys have influenced their development. Through their use heavier loads are carried, longer runs made and greater speeds attained.

Metallurgical advancement has likewise contributed to the improvement of Toncan Culverts. In 1908 Toncan was of commercially pure iron analysis without alloys. In 1921 a small content of copper was added, this greatly improving its service life. In 1924 a copper content practically double that of any other iron or steel was added, plus an additional element,—Molybdenum! It was found that the combination of these two metals, skillfully alloyed to the pure iron, developed a composition and grain structure which gave Toncan rust resisting qualities far in excess of those possessed by any other iron or steel.

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Plants Located in All Parts of United States and Canada
These Clubs Chose Roseman Mowers
(Read this list of a few of them)

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<tr>
<th>Club</th>
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<td>Wilmette Golf Club, Wilmette, Ill.</td>
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The above list contains a few names of Roseman Owners. For your own information the Roseman Tractor Mower Company will be glad to furnish you a much larger list.

Roseman Tractor Mower Company
Evanston, Ill. New York, N.Y.

Roseman Features:

- Timken Tapered Roller Bearings on Cutter.
- Hyatt British Tank Roller Bearings on Rear Axle.
- Alemite Forced Feed Lubricators.
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- Drop Forged Machine Cut Gears.
- LIGHT ROLLER DRIVE, for better Traction and turf development.

(Our patents give us the exclusive right to all ganging of Roller Type Mowers)
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 seasons' maintenance work, even though such disclosures may lay them open to criticism. With such reliable information at
WELTON SAYS:

". . . the hot, humid summer of 1931, compared with the slight turf injury of the hot, dry summer of 1930 will give a clue to this summer's turf ills."

". . . excessive insect injury to fine turf was largely due to last summer's drought."

". . . brown-patch was more active than usual, but tried remedies and cultural practices in most cases kept it under control."

". . . pythium did much damage in certain cases, but was generally the magic word to explain away otherwise incomprehensible turf injury."

". . . poa annua can apparently withstand heat, but it cannot withstand a combination of heat and excessive humidity."

". . . it is a mistake to try to keep greens during the summer in the luxurious fast-growing condition possible in spring and fall."

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