

torious piece of work, especially when we know that the building of even a railroad tunnel can be estimated within a fraction of one per cent.

Many a greenkeeper lost his position during the summer of 1931 only because his course was not scientifically constructed, and not on account of his method of maintenance. Still he had to take the blame. By this I do not mean to defend the greenkeeper who is lax or ignorant and lost his position justifiably. They also exist, goodness knows, much to the detriment of this profession.

A business man may thoroughly detest a man and still keep him in his employ simply because he realizes that the man is an asset to him. It is not always so in club life. There are not financial profits to be taken into account and hence the greenkeeper's personality is more of a deciding factor for or against him. Complications often arise and too often the greenkeeper is unable to follow his own practical and proven ideas, in the face of an invincible and haughty "know-nothingism." Whether he is responsible or not he is a handy man to blame if things do not go well. Unfortunately, in too many cases, those who have the power to hire and fire and judge are not always capable or wise.

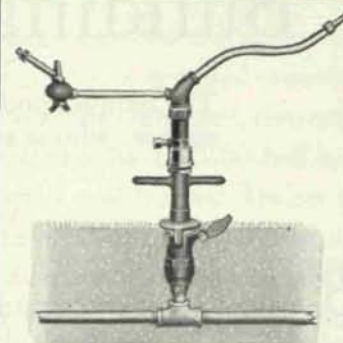
EVENLY BALANCED COMMITTEE IS A RARITY

AN EVENLY balanced, practical committee is a rarity. Few committees can boast of even one man who has a thorough grasp of golf course activity in all its ramifications. If they have, then a lack of time, and business interests, often prevent perfect cooperation, not to mention other complex conditions and peculiarities that minimizes the committees efficiency.

I can think of but one solution for this state of affairs. That is to have a committee of three, chosen as follows: *the chairman* to represent the club, whose duty it shall be to consider the club's position, both as to desires and finances. Secondly; the *professional*, who would consider the playing side of the game. Thirdly: the *greenkeeper*, who naturally would be interested in the practical side of construction, maintenance and labor.

It would be interesting to see such a committee functioning (especially if every man was made of the stuff he is supposed to be), for then we could expect to see the fur fly once in a while, with a net gain to the club as a result.

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Building Golf Courses In Japan

The unique conditions which prevail in the Far East are well described by the author, who is an American greenkeeper. Captain C. H. Alison was the architect of the Tokio Country Club.

By GEORGE PENGLASE

BUILDING a golf course in Japan is much more of a job than many people are able to realize. The implements used by the Japanese are so different from those used in this country that it is necessary to entirely change the method of construction. The American golf course builder encounters the same difficulty in building a golf course as he does in trying to eat with chop sticks. He doesn't know exactly how to go about it.

My biggest surprise came when I went to work for the first time, and began to look around for the teams and tractors. Teams and tractors seem to be as much a part of building a course in this country as is grass seed, and I was at a loss when I found that the Japanese do all their work by man power. If you ordered a crew of men in this country to build a mound ten or fifteen feet high with shovels and baskets, they would undoubtedly think you were crazy and leave the job immediately. The Japanese are accustomed to working in this way, however, and think nothing of digging a sand trap with shovels, and hauling the dirt away in baskets.

The entire area of the golf course, which was covered with trees, had to be cleared by hand. A man was given a certain section of land to clear for which he received the timber on it, and so the cost of doing this was negligible. This man would cut the trees down and then dig the stumps out and haul all of it away with his oxen and cart. It took a crew of 300 men three months to clear the land.

The topography of the new Tokio Golf course was very flat, thus making it necessary to build

many mounds and bunkers. This was an exceedingly big task as the dirt, for short hauls, was carried in baskets which held about eight shovels full each. The Japanese balance two of these baskets on a long pole and carry them on their shoulders. For long hauls, they use small dump carts that run on small narrow-gauge tracks. It takes two men to push one of these carts and they usually hitch eight of them in a line each car holding about a yard of material.



BUILDING NO. 18 GREEN AT THE TOKIO COUNTRY CLUB
The Japanese do most of their work by hand labor and at one time Mr. Penglase had 600 men working on the construction of this course. The details as he describes them are extremely interesting.

After the land was cleared, I employed about 600 men all the time. These men worked ten hours a day, seven days of the week, for one yen a day, which is about fifty cents in our money. With a crew of 600 men working on the construction of a golf course in this country, one could complete it in a comparatively short time, but the conditions in Japan make it a diffi-

cult and long task.

Plows are not used in Japan. All the fairways and greens were cultivated with forks, picks, and shovels. One can easily understand why it takes the time it does to build a golf course under such conditions as these.

FAIRWAYS SEEDED WITH BLUE GRASS

THE fairways were seeded with blue grass, yarrow, and red top, and the greens were planted with Cocoos bent. Viscount Soma, of the Imperial University and chairman of the Green committee of the Tokio Country Club, experimented with the common seeds used on golf courses in this country and found that they were adaptable to the soil and climate in Japan.

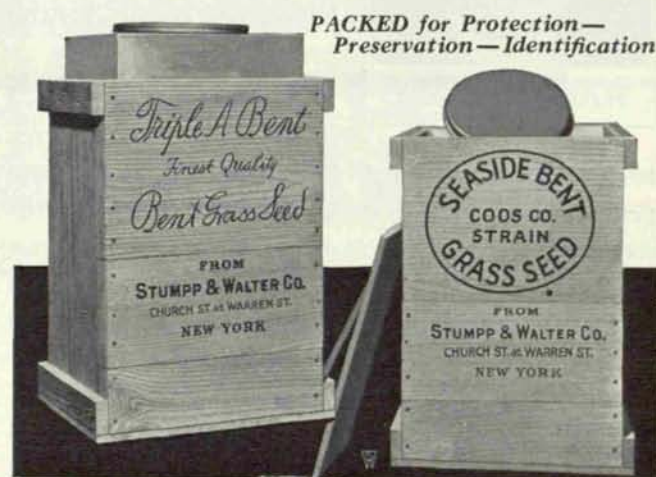
The course is equipped with an automatic watering system. It was necessary to sink a 400-foot well to obtain sufficient water to serve the course. There is also a water hole which was built to make the course more sporty. As the soil is of a sandy nature, it was necessary to make a cement base for the pond.

Another great handicap that I worked under was not being familiar with the language. If you have ever attempted to learn the Japanese tongue, you realize what a hopeless task it is. Of course, it is possible to pick up a few words here and there that are of use, but to attempt to learn the language intelligibly enough to be able to direct a force of men is practically impossible, unless one spends years studying it. I was therefore forced to write my instruction in English to my foremen, who were able to translate them into their own language by the aid of a dictionary. This was a very inconvenient and cumbersome means of giving orders, but it was the best I could do under the circumstances.

The Tokio Country Club is 6,700 yards long, and is one of the championship courses of Japan. It was designed by Capt. C. H. Alison, who has laid out many courses in this country and in Great Britain. Practically all of the other 60 courses of Japan were designed by the Ahaboshi brothers, both of whom have been amateur champions of Japan. They have also played a great deal of golf in Great Britain and the United States.

The officers of the Tokio Country club are planning on planting flowers along the roughs of each fairway, and then naming the holes instead of numbering them. For example, if they planted

rose bushes along number one fairway, they would call it the Rose Hole. Although this will not add to the sportiveness of the course, it will add considerably to the beauty. I am afraid, however, that some non-aesthetic golfer will raise havoc if his ball happens to land in a clump of rose bushes. Unless the patrons of this club are of a very even disposition, I fear that the yearly dues will have to be raised in order to replace the flowers dug out by the non-nature-loving golfers who spend most of their time in the rough.



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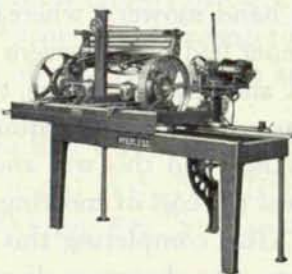
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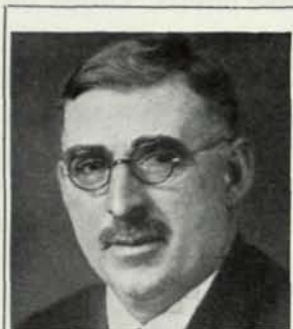
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Golf Courses Cannot Be Standardized

By FRED A. BURKHARDT, *Greenkeeper,
Westwood Country Club, Cleveland*



FRED A. BURKHARDT

SOIL is to a golf course, as a foundation is to a building. Courses are built on all kinds of soils, just as structures are built on different kinds of foundations—each and every one has its own conditions and problems.

A poor soil requires a good deal more fertilizer to produce a desired product than a rich soil, and yet the rich soil with its less requirement of fertilizer might cost more to keep grass than the poor soil because of its texture. By texture, I mean its ability to take in water, sunlight, and air, three vital requirements for all plant growth.

A heavy soil will cost a great deal more for drainage, and unless it is broken down with sand or other large particles it would be an expensive job to grow good turf in it.

Besides the various qualities of soil, there are many other differences in upkeep that account for the varying maintenance costs of golf courses.

A COMPARISON AFFECTING COSTS

LET us take for example two parcels of land, one on each side of a highway. The soil in each piece of land is rich in plant food, its texture correct for good grass growth. This land is bought for two different golf courses. Two architects are hired, one for each course. The architect for course A, being an artist in land designing, builds up almost every green to give a pleasing effect, and traps every shot to make the course of championship calibre. He has a great many rolling contours. The architect for course B having had his training across the sea, picks out natural sites where it will take very little excavation.

On course A, the fairways are seeded to fescue and the greens and tees to German mixed bent. On course B, the fairways are seeded to Kentucky blue grass, the greens and tees are planted to stolons.

The following spring, both courses are turned

over to their respective chairmen of the Green committee and greenkeeper. The first summer both courses get along beautifully and in the fall the two chairmen meet to compare operating expenses and maintenance costs.

The first difference they notice is the cost of topdressing and fertilizing. Course B had been topdressed more often and a greater amount of fertilizer used on the fairways than course A. But on the other hand, it cost considerably more to mow course A than B.

The chairmen of A and B courses comparing figures, could not understand why two courses with the same kind of soil each with the same number of holes and yardage should have such a variation in operation costs. Therefore, they called their greenkeepers into the meeting and the chairman with the stolon greens and Kentucky blue grass fairways, asked his greenkeeper why he topdressed his greens four times when course A was only topdressed twice, and why it cost so much more to fertilize their fairways than the other course.

The greenkeeper explained that it was necessary for him to topdress his stolon greens more often to keep the grass from forming a mat and getting a grain. In order to make the grass stand up, it was necessary to keep brushing and topdressing. As to the greater amount of fertilizer for the fairways, the greenkeeper explained that Kentucky Blue grass takes a great deal more feed than fescue to keep a strong, healthy turf.

Then the chairman of Course A asked his greenkeeper why their cost of mowing so greatly exceeded that of Course B. His greenkeeper explained that their greens, tees, and approaches were mowed by hand mowers, whereas the neighboring greenkeeper had power greens mowers, approach mowers, and tractors. Then, too, Course A had twice as many traps that required hand mowing with scythes, and this was another feature that helped boost the cost of mowing.

After completing this comparison of operation costs, the chairmen discovered that there was as much difference between the operations of separate

(Concluded on page 26)

Greenkeepers of Rhode Island and Adjoining Territory Meet at Kingston, R. I.



THIRD ANNUAL GREENKEEPERS' FIELD DAY AT AGRICULTURAL EXPERIMENT STATION OF RHODE ISLAND STATE COLLEGE

THE Third Annual Greenkeepers' Field Day was held at the Rhode Island State College and Experiment Station on May 23. The day was ideal and more than 100 greenkeepers and other turf enthusiasts were present.

After registration the greenkeepers visited the turf experiments at the Experiment Station under the guidance of T. E. Odland and H. F. A. North. Although the season has been rather cold and unseasonal the grass plats were at their best. Various fertilizer tests, variety tests, bent grass strains from different clubs, bent grass for seed production and many other experiments and tests are under way.

From the grass plats the way led to the College dining hall where 95 were served with a dinner, the special feature of which was Rhode Island Red chicken pie. After luncheon the visitors were extended greetings from the College by President Raymond G. Bressler. Director Gilbert of the Experiment Station acted as Chairman of the meeting and introduced a number of the greenkeepers and others present.

The chief address of the day was made by Dr. Howard B. Sprague, Agronomist of the New Jersey Experimental Station. The topic was "Soil Conditions and Plant Growth."

Following the dinner and talks the annual business meeting of the Rhode Island Greenkeepers'

Club was held. The following officers were elected: President, John Hay, Agawam Hunt Club; vice president, Thomas Galvin, R. I. Country Club; treasurer, Martin Greene, Wannamoisett Country Club; secretary, Woodworth Bradley, Providence, R. I.

More than a dozen firms were represented with various lines of equipment. Demonstrations of equipment occupied the time from 3 p. m. to well toward 6 o'clock. The opportunity to see and compare these different types and makes of equipment is proving one of the outstanding features in these field days. At no other time during the year is there a more genuinely interested and enthusiastic gathering at the College than when the greenkeepers have their field day.

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DR. HOWARD B. SPRAGUE

Turf Field Day at the New Jersey Agricultural Experiment Station

By DR. HOWARD B. SPRAGUE, *Agronomist,
New Jersey State Agricultural Experiment Station,
New Brunswick, N. J.*

A FIELD day program, devoted entirely to turf culture, was conducted at the New Jersey Agricultural Experiment station on Monday, June 20. The meeting was sponsored jointly by the New Jersey State Golf association, New Jersey State Greenkeepers' association, and the State Agricultural Experiment station. All persons interested in producing and maintaining turf on golf courses, lawns, parks, etc., were cordially invited to attend.

The program began at 3 p. m. on the experimental turf plots of the Agronomy department at the College Farm, New Brunswick, New Jersey. Each

of the several hundred plots were carefully labelled, permitting inspection of the turf experiments. More than two hundred persons were present, representing chairmen of Green committees, greenkeepers, golf course professionals, seedsmen, fertilizer dealers, park superintendents, and various other individuals interested in turf maintenance. During the afternoon, a discussion of the field experiments was conducted by Dr. H. B. Sprague, Agronomist of the New Jersey Experiment station, and his associates.

Particular interest was shown in the effects of different types of nitrogenous fertilizers, the influence of lime and phosphorous in connection with nitrogen for bent grass turf, the relative value of specific grasses for putting greens, investigations on fertilizers for fairways, and the improvement of



GROUP OF GREENKEEPERS AND TURF CULTURE EXPERTS WHO ATTENDED THE SHORT COURSE AT THE NEW JERSEY STATE AGRICULTURAL COLLEGE.

soils by the addition of organic matter. Exhibits displaying the effect of different systems of feeding bent grass under controlled conditions in pot experiments, the response of *Poa annua* to various types of fertilizers, and the ability of different sources of organic matter to retain nitrogen compounds in spite of leaching, aroused considerable discussion.

At 6 p. m. the group adjourned to the Hotel Woodrow Wilson, where dinner was served, followed by a program of talks on turf problems. The relative value of sulphate of ammonia and nitrate of soda, and the proper use of these fertilizers was considered in some detail in the light of critical experiments conducted during the past year and a half at the Experiment station.

Mr. Robert F. Arnott, chairman of the Green Section of the New Jersey Golf association, officiated at the dinner. Short addresses were delivered by Mr. John Anderson, president of the New Jersey Greenkeepers' association; M. E. Farnham, secretary of the Philadelphia Association of Golf Course Superintendents, and John B. Mackie of the Metropolitan Professional Golfers' association.

Golf Tournaments

- July 4-9**—West Virginia State Golf Association Amateur Championship at the Greenbrier Golf Club.
- July 7-9**—Royal Canadian Golf Association Open Championship at the Ottawa Hunt and Country Club.
- July 11-16**—Ohio State Golf Association Amateur Championship at the Portage Country Club (Akron).
- July 14-16**—Metropolitan Golf Association Open Championship at the Lido Golf Club.
- July 19-24**—United States Golf Association Public Links Championship at the Cherokee Park course (Louisville, Ky.).
- August 4-7**—New York State Golf Association Amateur Championship at the Niagara Falls Country Club.
- August 8-13**—Royal Canadian Golf Association Amateur Championship at the Lambton Golf and Country Club (Toronto).
- August 16**—Preliminary Sectional Elimination Rounds for the U. S. Amateur Championship (Courses to be announced).
- September 12-17**—United States Golf Association Amateur Championship at the Baltimore Country Club (Entries close July 26).
- September 25-October 1**—United States Golf Association Women's Championship at the Salem Country Club (Salem, Mass.).



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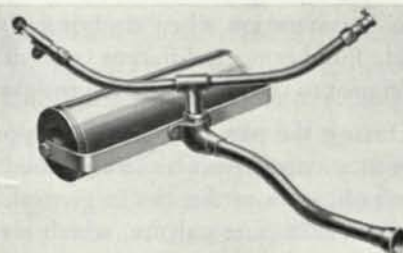
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Eradication of Brown Patch

By ARTHUR BOGGS, Pro-Greenkeeper,
Kirtland Country Club, Cleveland



ARTHUR BOGGS

Who is not only a worker, but a thinker on golf course maintenance.

FOR the past three years I have had the cooperation of a capable chemist and excellent laboratory facilities to determine the efficiency of various chemicals in controlling and eliminating brown patch. Turf troubles of this description are due to fungi and the problem presented is the destruction of this mold without injury to the turf. A very great deal of work has been done on this subject by other investigators and numerous chemicals have been tested and tried

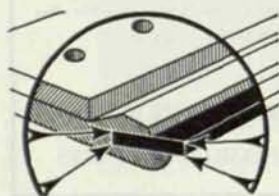
for checking the growth of the fungus or eliminating it altogether.

It is a well-known fact that the alkalinity or acidity of the soil, the kind of fertilizer used and climatic conditions are all important factors which have to be taken into consideration when studying plant diseases of this kind. Furthermore, different types of grass vary in their resistance to the ravages of the fungus.

During the past year we have approached this question in a manner similar to that used by sanitarians for the eradication of diseases in general. We have isolated the fungus in pure culture, which is the principal cause of our brown patch trouble, and have subjected it to the action of different chemicals to test its resistance. The results from this work have convinced us that the organism is intensely sensitive to a group of chemicals which have not heretofore been used, so far as I am able to determine, for the eradication of this turf pest.

One of these chemicals is more than 600 times as destructive to brown patch fungi and other unicellular organisms than pure carbolic acid. We have made practical applications of this chemical and the results have been so outstanding that I hasten to place this preliminary report into the hands of greenkeepers without delay.

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Briefly, our method of procedure has been as follows: Different quantities of the chemical were dissolved in fifty gallons of water and the greens treated in the customary manner. Before the spray was applied cultures were taken to determine the presence of the fungus. Three days after spraying, further cultures were taken and it was found that the addition of as little as 1-2/3 ounces of the chemical were sufficient to eradicate all traces of living brown patch fungus from a green of 5,000 sq. ft. in size.

It should be added that this study was made under strictly controlled conditions. In our practical experiments we were careful to allow small portions of the greens to remain untreated so that the effect of changes in temperature, humidity, etc., could be observed while the treatments were made. It is yet too early to state definitely how long a single treatment will render a green sterile so far as fungi growth is concerned but the outstanding results secured thus far from the use of the chemicals convince us that a continuance of this study is desirable. I will be glad to communicate at a later date any additional results secured.

In the meantime I am endeavoring to secure a supply of the chemical in question and will try to supply greenkeepers at the earliest possible moment with at least limited quantities of this material so that they can determine its efficiency for the eradication of their own brown patch difficulties.

The Lawn

BY LAWRENCE S. DICKINSON

Ass't. Professor of Horticulture
Massachusetts State College

Defines and Describes the Culture of
Turf in Park, Golfing and Home areas.

CONTENTS

The General View	Controlling Pests
Molding the Lawn	General Maintenance
Preparation of the Seed Bed	Lawn Mowers
Seed Selection and Planting	Park Turf
Important Turf Plants	Cemetery Turf
Planting a lawn with Stolons	Useful Tables
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The National Greenkeeper

405 Caxton Bldg.

Cleveland, Ohio

Minnesota Gossip

By H. E. STODOLA, *Secretary*



H. E. STODOLA
Secretary, Minnesota
Association of Golf
Course Superintendents.

THE June meeting was held at Woodhill Club, where Leo Feser is superintendent. Here is one man that is really a superintendent. Greenkeeping is just one part of his duties. He also has charge of an eighty-acre farm that belongs to the club. There are four horses, one hundred and twenty sheep and what not that require his attention. On top of all this each year he holds the most fashionable horse show in the Northwest. So when I say, Leo is a superintendent, I can prove it because he has charge of a golf course, farm, bridle paths and tree nurseries.

* * *

In addition, Leo Feser is an active Director of the National Association of Greenkeepers of America and vice-president of the Minnesota Association. He is also a founder and honorary member of the newly-formed Iowa Association.

Leo first showed us his tree nursery of ten thousand trees. He has blue-spruce, arbor vitae, Chinese elm, maples, Austrian pines and other trees that he transplanted on his course. He has thirteen greens either Woodhill or Metropolitan bent and they make a perfect putting surface. Woodhill seems to be a strain of Metropolitan. It has a healthy blue-green color, shows up well early in the spring, withstands brown patch, thrives on close cutting and stays green after frost.

Some of his greens he stolonized, some he plugged, and some he dibbed in, that is forced in solons here and there. He has a fine root growth and real soil texture. His greens have a spring to them and hold the ball. Leo has been rewarded with fine greens and certainly deserves it after his trying times with the ill-fated Columbia bent. Woodhill is a fine kept-up course and reflects its keeper's care.

* * *

FESER OWNS HIS OWN COURSE

Feser is one of the few greenkeepers I know, in fact the only one I know, who owns a course of his own. It is



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Orono Orchards, a sporty nine-hole layout with Metropolitan greens. His greenkeeper is Frank Anderson, a hard worker and a very pleasant fellow. We went to Woodhill to see the course and came away remembering our pal Leo.

Before closing, let me say that Woodhill has the finest compost I have ever seen. The next meeting, Monday, July 11, will be held at the Town and Country Club, St. Paul, Minnesota.

Oklahoma News

By MERLE ZWEIFEL

THE worst cloudburst and rainstorm in the history of the state tore through the capitol city during the first week of June, tearing homes from their foundations, flooding downtown business houses and receding waters revealed more than a score of persons killed and injured and property damage close to two million dollars

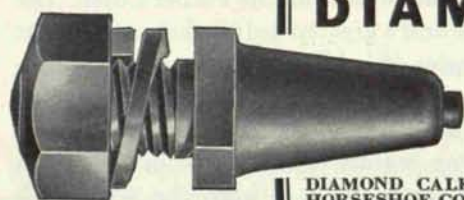
Oklahoma City golf courses came in for their share of the damage. Four of the city's larger courses, Lincoln Park, Twin Hills, Edgemere, and Lakeside were flooded with Lincoln Park Municipal course suffering worst. At the east end of the lake at Lincoln Park the water broke over the dam and flooded the golf course, seriously damaging four bent grass greens and leaving rubbish and silt over most of the new greens in the low land.

The greens badly damaged were Nos. 3, 13, 18, and also the 18th hole on the north side and reports were that one green was completely ripped out leaving in the place a ravine running to Northeast Lake. On the east side of the course all bridges were washed out and the new fairways were badly washed in places. Greenkeeper Tom Gullane began cleaning the rubbish off the fairways and greens immediately after the storm and it is expected he will have the course ready for play within a few days.

* * *

Although three of the grass greens at the Lakeside Golf and Country Club, eight miles west of the city, were still under several feet of water at the time of this writing, it was believed that no serious damage was done as the main body of water was moving slowly and there was little danger of washing.

Greenkeeper Edward Meadows of Lakeside will set to work rebuilding bridges and repairing damaged greens in an attempt to land the qualifying round of the Trans-



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Mississippi tournament. Incidentally this is Lakeside's first season with Edward in charge of course maintenance and visitors from that club say he is going over in a big way.

* * *

But as the old saying goes, it is an ill wind that blows nobody good. And that was especially true of the rain-storm which drenched Oklahoma City. Before the deluge soaked the courses in that district the fairways were suffering seriously from lack of water and it was evident that they would never last through the hot weather, but forty-eight hours after the rain the fairways were greener and indications are that they will go through the summer in good shape.

* * *

TOO MUCH WATER HURTS GREENS

Too much water is detrimental to bent greens in Oklahoma, especially those that are not tiled, says Ted McCasling, greenkeeper at the Muskogee Town and Country Club, of Muskogee, Oklahoma. Certain members of that club howl to the high heavens when he refuses to soak his greens until a pitch shot will bury itself in the turf and there are a few cranks that expect a golf ball to stop dead the instant it touches the green—regardless of how the shot was played. But Ted gives his greens the necessary amount of water to keep them in good condition and today he has some of the best putting greens in the eastern part of the state.

A dwindling membership caused the directors to meet last spring and slash the budget in two, however, Ted has always managed to keep the course in excellent playing condition and even make some necessary improvements that looked impossible several months ago.

Pacific Coast Gossip

By ARTHUR LANGTON

EMULATING their contemporaries to the south, the greenkeepers of northern California, particularly those in the vicinity of the San Francisco bay district have organized themselves into a greenkeepers' association. The first meeting was held at the San Francisco Country club recently. Fourteen greenkeepers were present and many more, some from as far south as Fresno, have promised to attend the next meeting.

* * *

The last meeting of the Southern California Greenkeepers' Association was held at the Montebello Public



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Golf course on June 13. Armin Thurnher, superintendent of parks in the beautiful city of San Marino, was the speaker with an address on fertilizing grass through sprinkling systems by the use of a Venturi tube. This device permits a flow of water from the main line to pass through a tank containing soluble fertilizer, carrying it to the irrigation outlets.

Thurnher suggested that this system could be used on fairways with beneficial results. The magnificence of the San Marino lawns testifies to the practicability of the tube method.

The speaker, an Austrian, received his botanical training in continental Europe. As a cavalry officer during the late war, he was captured by the Russians and sent to Siberia, where he planted his first lawn. One of the Russian officers wanted a garden building and put Thurnher on the job. His only tool was a shovel which he turned into a plow by attaching a rope to it and having somebody pull while he held it into the ground. Nevertheless, he completed the job.

* * *

Depression or presidential year to the contrary notwithstanding, greenkeeper Charles Cavanaugh of the Los Angeles Country Club, is superintending the building of eighteen new greens on his South course. This is a real job with two or three feet of fresh soil being used on each green in the reconstruction.

* * *

Kenneth MacLean, formerly superintendent of the Del Mar course in California, has been appointed in the same capacity at the Humbolt Country club in the other end of the state. Having moved from a region of slight rainfall into the "Evergreen Empire," he is astonished by the fact that even as late as June he had found no necessity for irrigation. In the region around Los Angeles just now water bills on eighteen-hole golf courses are amounting to over \$800 a month.

* * *

Bobbie Jones's recent article in the U. S. G. A. greens bulletin has aroused considerable favorable comment among course superintendents on the Pacific Coast. The statement of the world's greatest golfer that greens kept soggy for the purpose of holding pitch shots are a detriment to both the game and the putting surface met with a loud and heartfelt "Amen" that went sailing out o'er the Pacific's rolling waters, particularly in the south where greensmen are battling to keep the water bills down and the quality of the playing surfaces up.

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