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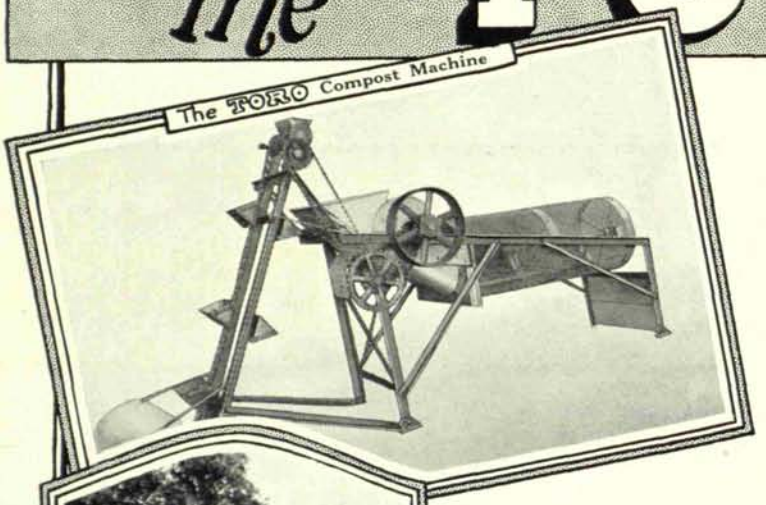

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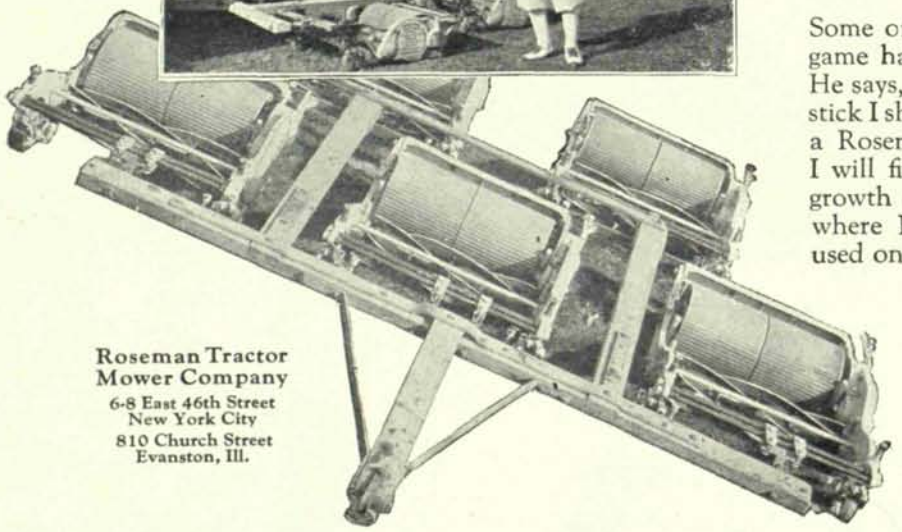

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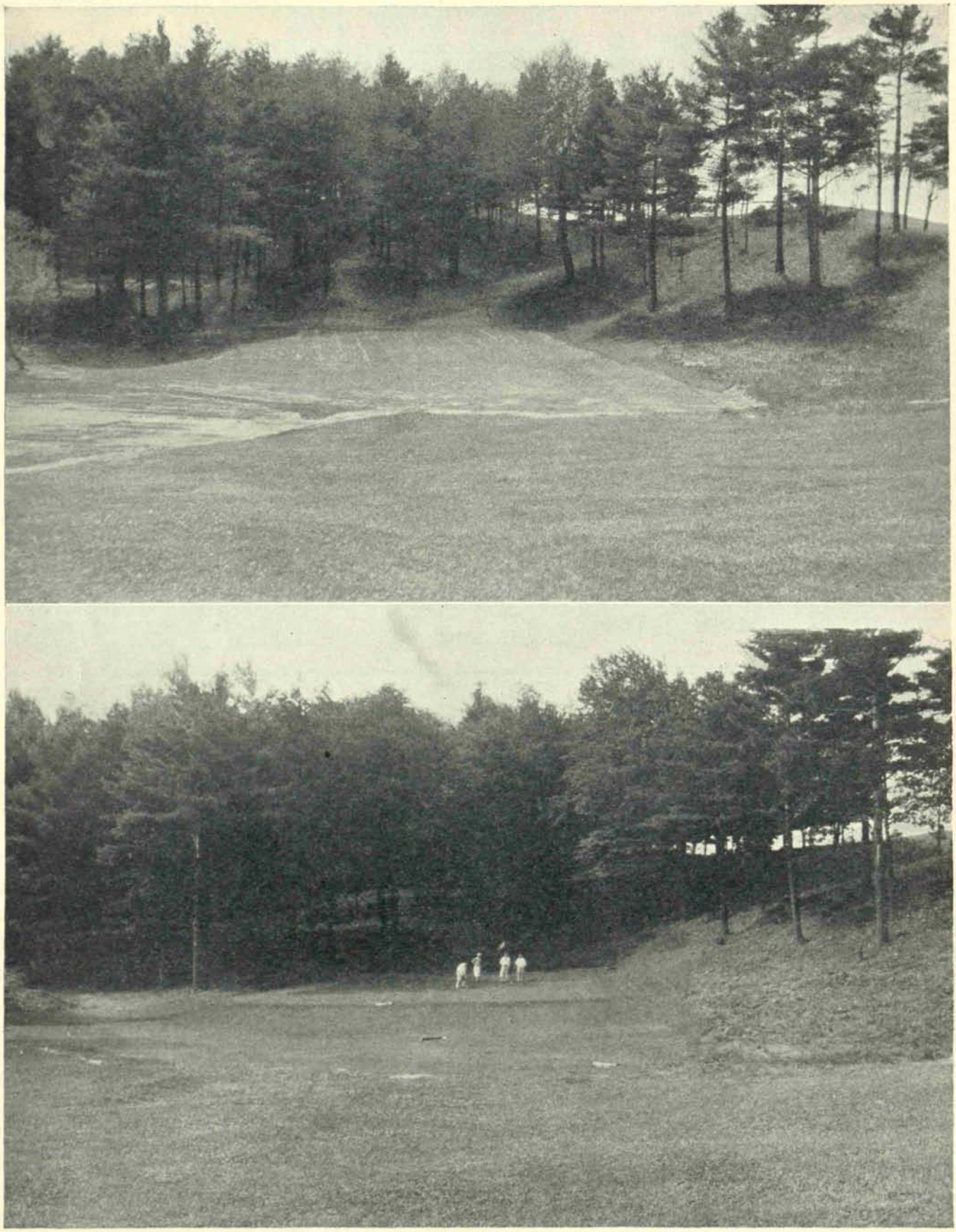

Upper, Number 3 at Greenville Country Club, Greenville, Michigan, taken May 15, 1927. Lower, same Green on July 15, showing what two months of growing weather will do for bent

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Re-Building Greens at Greenville

By GUSTAVE HANSEN

Greenkeeper, Greenville Country Club, Greenville, Michigan

ALTHOUGH I do not consider my advice of much importance to older and more experienced greenkeepers than myself, I am anxious to contribute something to THE NATIONAL GREENKEEPER in support of our association.

Gustave Hansen

We all know the old saying, "in union there is strength," and so it is with the greenkeepers. With such men as O. J. Noer of the Soils Department, University of Wisconsin; John Monteith, Jr., Associate Pathologist of the United States Department of Agriculture; C. M. Scherer, expert on trees, greenkeepers who are keen observers with a life-long experience, and all others who contribute to the NATIONAL GREENKEEPER—the magazine sure is of much value to the greenkeeping profession.

Planting Flossmoor Stolons

We started in August, 1926 to rebuild our greens and tees and prepare to plant Flossmoor bent stolons. Here I must say I found I had quite a job on my hands to direct the construction and planting of these greens at the time of the year when labor is scarce and hard to keep in this locality. Our Number 3 green is now growing where we had at that time a pine forest.

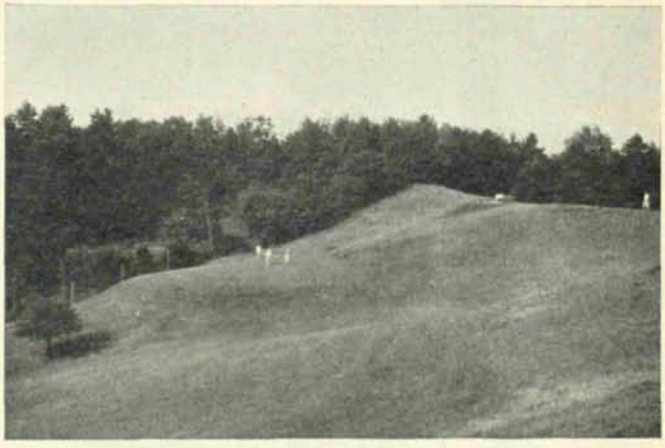
We have a deposit of muck on the club grounds. This was used about 50-50 with good medium loam top soil to make up the top 4 or 5 inches of the stolon bed. After a thorough discing to pulverize the soil I sowed about 20 pounds per thousand square feet of green grower and raked it in.

We cleared a patch in the pine woods when we removed the fertile top soil and passed it through a one-quarter inch screen. This was used with compost which was three years old to cover the stolons, the compost being made up of muck and stockyard manure and a small amount of lime, about two parts top soil and one part compost. Our tees were enlarged and the sod was lifted from the old greens and laid on the tees. This sod is mostly red top with some red fescue and white clover.

We planted about fifty-five thousand square feet of bent stolons and did not lose one bit with the exception of a strip about 8 feet wide across the approach to Number 3 green and this was caused by the spring water washing it out and carrying it away. The approaches were planted to Washington bent.

Ammonium Sulphate After Growth Starts

I find the Flossmoor Strain is fine leaved, a bright green color and makes a fine putting green. It grows very slowly during the cool weather of spring, but when the temperature reaches 75 degrees or more it makes a mat of turf very rapidly. My idea is to apply am-



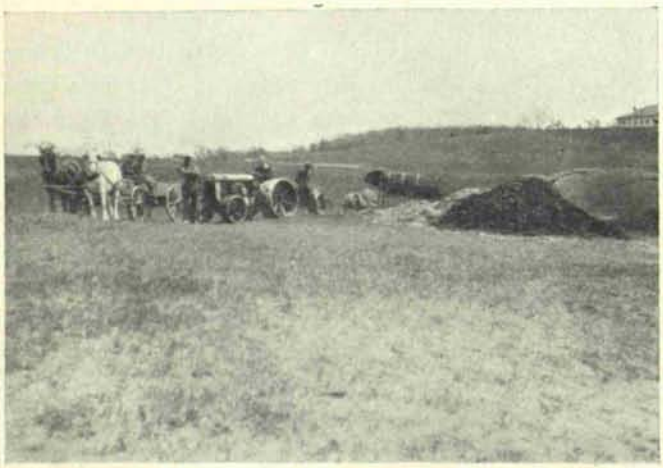
New number 1 bent green at Greenville. Background shows one of the many natural groves on this course

monium sulphate on newly planted stolons as soon as growth is well started in the spring and every two or three weeks thereafter until the greens begin to mat. Then watch out—don't wait too long before you top dress with sand or some fine loam that is not too highly fertilized. Use the ammonium sulphate sparingly and by all means keep it cut closely every day.

I have found that close cutting and top dressing often will check a lot of weeds; although I have not eliminated them I have checked a very heavy growth of weeds as the top soil I used was very full of weed seed.

Alkaline and Acid Top Dressings

Two kinds of top dressing material have been used—a 50-50 mixture of compost very rich in humus, and a sandy loam, the compost testing alkaline, and the loam



The Greenville Country Club "gang" working up a good supply of top dressing

strongly acid. After the first few days of vigorous growth from sulphate of ammonia I noticed a sort of reddish brown stain of the leaves. I have been unable to account for this so would be pleased to hear from anyone regarding it. However, it disappeared some time ago.

Fertilizer Experiments

I have applied a small amount of Milorganite which I received as a sample and also a small amount of Premier brand poultry manure to different portions of a green and have found that the turf developed faster and maintains a healthy appearance where each fertilizer was applied, but I find it maintains a healthy color and vigorous growth longer from the Milorganite and I also have less weeds.

White Clover Better Than Sand Burrs

For four years I have nursed along a very thin stand of June grass and white clover on the fairways. We now have very fair fairway turf in the place of blow sand and sand burrs by top dressing with muck in late fall and applying lime during the summer. About four years ago I succeeded in getting a lot of white clover started. I have kept seeding the last three years with red top, blue grass and yarrow. Of course we have plenty of white clover now but when kept mowed short the objection to it is not great and it beats sand burrs any time. We have a sort of sticky soil which crumbles when it dries. I have applied this heavily to the sand and it now supports a fine stand of yarrow. We applied poultry manure at the rate of 600 pounds per acre last spring and I noticed a remarkable improvement soon after.

No Trouble With Worms or Brown-Patch

Getting back to the greens I must say I have not had any trouble from worms or brown-patch yet, although I have two greens on which I expect trouble with brown-patch on account of the "dead air" location of them. These greens are all doing fine, but I am not satisfied with the surface yet as to being true enough to cut the grass at a uniform length and cut it short. I would like to hear what tools are used.

I have a small turf bed which I have used to sod in bare spots on the greens and this fall we plan to take stolons from a portion of this bed to plant a practice putting green near the clubhouse.

Sand Greens Hard to Maintain

In regard to sand greens I do not care to say much. Although I have maintained them several years, I have never found any treatment that will maintain sand greens every day in the playing season. It takes a lot of labor and time after each heavy rain and wind to bring them back, thus they are out of play too much of the time.

Do Your Bit for the Association

I wish to express my appreciation of what the men who brought into existence the National Association have done, and I hope that we will be able and willing to contribute the support that will fulfill the objects set forth by President John Morley in his address delivered at the first annual convention in Chicago last March. No greenkeeper in America can afford to overlook the just recognition of the greenkeeping profession which this association and magazine offers him. I am very proud of the charter membership card I keep in my vest pocket.

Greenkeepers, Play Golf!

By MICHAEL J. O'GRADY, Greenkeeper
Country Club of New Bedford, North Dartmouth, Massachusetts.

I CHOOSE to believe that I was unusually fortunate in my initiation into the greenkeeping profession, for on coming to the United States of America from Mayo, Ireland, at the close of the World War, I was taken in hand by Thomas J. Galvin, greenkeeper at Rhode Island Country Club—who, incidentally is my uncle. After four years in Rhode Island, I came as greenkeeper to the New Bedford Country Club, where I have found my work to be of intense interest and very great pleasure.

Keep Your Greensmen Interested

As a matter of policy, the first thing I concerned myself with was the selection of workmen, with a view to picking the most careful and painstaking men to be put in charge of the greens. I found I was going to be lucky in this, for I got really good greensmen, and in addition found I had one man who was a very handy carpenter, while another was sufficiently versed in plumbing to be able to take care of all that end of the work during summer and fall.

Having secured good men, I decided it was up to me to retain them by according them their just need of praise and commendation for good work, a policy which has certainly resulted in contentment and sincere interest on the part of the men.

Sandy Loam and Hilly Course

On this particular course one problem confronting us is the dry sandy loam coupled with the very hilly terrain, these conditions calling for the greatest possible care to keep the course in good condition during the summer months of heavy play. My method of greens maintenance is the frequent use throughout the season of a good compost dressing, for this practice has proved a sound one in my case. Roughly speaking I use each month for a green of say 800 feet by 100 feet, a top dressing of two cubic yards of loam and about 22 to 28 pounds of sulphate.

The important work of watering the greens is done here in the early morning and late afternoon, as it is my belief that this method, by allowing the greens to be kept dry during the night, does materially assist me in the control of brown-patch.

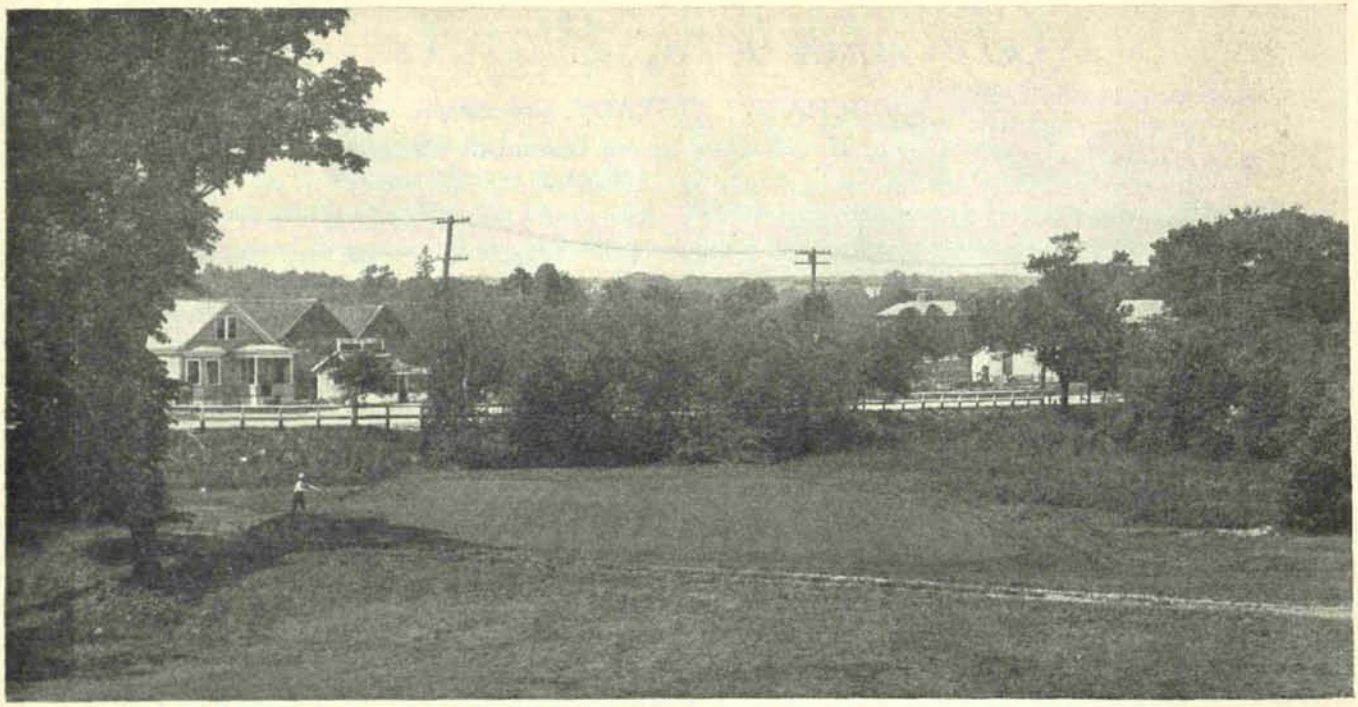
Weed Out Crab Grass Early in Spring

Crab grass is something of a scourge on our New Bedford course. It makes its appearance usually about the second week in July, and really provides us with all the trouble we care to have. For efficient handling of the crab grass problems I am compelled to engage extra labor, and I purposely choose men for I do not find this a satisfactory job for women or boys. I have proved that a green well weeded this year is going to confront me with much less trouble next year. I try to exterminate the crab grass just as soon as it appears, otherwise the green is reduced to poor condition. When the men are engaged in this weeding, I have them carry along a quantity of seeded loam with which to fill in after each weed has been dug out. This method helps considerably, I find, to work in the creeping bent.

Greenkeepers Should Play Golf

My routine working schedule is really such a usual one that I doubt whether its details would furnish much interest. If, however, I might add a personal observation, I would say that I would like to see every green-

Michael J. O'Grady



Chipping one onto Number Three at New Bedford. Note Background of Evergreens

keeper play golf—I even believe it to be essential for him if he is to get the fullest measure of delight out of his job, and a greenkeeper who has a round on his own course once in a while is surely able to render improved service to his club.

After a game, the greenkeeper is, beyond a doubt, better able to appreciate some of the problems that may confront the chairman of the green committee—and the two are almost sure then to work together in sympathetic understanding.

Longer Terms for Chairmen

Talking of Green committee chairmen, by the way, I am strong for the system that retains one man in the greens chairmanship for as long a time as possible. Frequent changes of chairman seem to me to be detrimental

(*Continued on page* 38)

Number Seven at New Bedford, Showing Good Contour and Trapping

The History of Poa Bulbosa

By LYMAN CARRIER

Lyman Carrier

IT was in the spring of 1915, if my memory is not at fault, that a package of sod was received at the Department of Agriculture from the Superintendent of Grounds at the Virginia State Capitol. Accompanying it was a request for its identification and information as to the best methods to use in eradicating the grass. Requests of that nature were of almost daily occurrence but this proved to be out of the ordinary run of plant pests which were sent to us. Professor Piper turned the package over to me for attention.

The upper half inch of the sod was packed full of little bulbs of about the size and shape of grains of wheat. To the tips of the bulbs were attached one or two fine, brown, shriveled leaves of an inch or two in length. There was not a particle of living tissue in evidence except at the hearts of the bulbs. A casual observer would have pronounced the sod as dead as a door nail. Nor was there a sign of a seed head, so the usual methods of working out an identification, botanically, were out of the question. A patient search through the lists of American grasses and grass-like plants failed to find any such plant described.

Poa Bulbosa Dormant in Hot Weather

Further correspondence brought out the information that the areas of lawn where these bulbs occurred had been bright and green all winter and had suddenly turned brown at the beginning of hot weather. Those in charge feared that their lawn was ruined. I had been to Richmond many times and knew that the principal lawn grass there was Bermuda grass which is always brown or straw colored during the winter and early spring and that it would soon take on its summer growth of velvety green. So I advised against any attempt being made to eradicate this newcomer and asked for time in which to make an identification. The government men are often accused of being slow in giving out information but the public does not always realize how tough the nut is that is sent in to be cracked.

From the behavior of this grass I suspected it had to have a resting or dormant period the same as crocus or tulips and knew it would be useless to try to get the bulbs to germinate at that time of the year. The following fall I planted some of the bulbs in flower pots in the greenhouse. They germinated readily and in a short time I had some beautiful miniature lawns but months passed without any flowering stalks appearing. Had we known then as much about the effects of the length of day on the flowering of plants as we do now it would have been an easy matter to have thrown it into blooming by the use of artificial light at night.

One day I happened to notice a resemblance between the leaves of this grass and those of Kentucky bluegrass. This gave me a clue which led to its identification. I found in a European botany, listed among the bluegrasses or meadow grasses as they are called over there, "Poa bulbosa" and was sure that it was the grass I had been puzzling over for nearly a year. We afterwards by careful nursing got it to bloom and so were enabled to confirm this identification.

Only Grass That Grows from a Bulb

Poa bulbosa is a plant curiosity. So far as known, it is the only grass to grow from a true bulb. Timothy and a certain strain of oat grass have enlarged joints at the base or crown of the plants but these are not true bulbs like those of the onion or lily. New growth or sprouts from timothy come from buds below the enlarged portion. In the case of Poa bulbosa the growth starts out of the top of the bulb just as it does in an onion.

Does not Produce Seed

Another peculiarity of this Poa bulbosa is its lack of ability to produce seed. In the East as at Washington or Richmond it usually dies down in the spring before it has made any attempt to seed. When seed heads do appear instead of going through the customary stages of forming seed there are produced little bulblets in the spikes of the flowers. These are similar in character to the top-sets in onions and are about the size of red-clover seeds.

After making the identification I went to Richmond and obtained permission to dig out a quantity of the bulbs to use for experiments. Some of these were sent to several experiment stations. Strange to say not a single experimenter could see any economic value in such a plant. But a rancher in Oregon who now has quite a large acreage of the grass has found that it makes a most valuable winter pasture having a carrying capacity and feeding value superior to the best bluegrass.

Planting With Bermuda Grass

Of course I was interested in it primarily from a fine

turf standpoint. A plot of a combination of Poa bulbosa and Bermuda grass was planted in the Arlington Grass Garden at Washington, D. C. some seven or eight years ago and I understand it is still there. The result is unusually gratifying for the Poa bulbosa fills a long felt want, that of a winter-green grass for the South. In the winter time this Poa bulbosa plot makes the best showing of anything in that Garden. It is needless to say that the authorities at the Virginia State Capital were no longer anxious to eradicate this grass after they found out the nature of the plant they had. Instead an effort was made to spread the bulbs over the entire lawn. Bermuda makes a beautiful turf in the summer and combined with Poa bulbosa the two make an all year round turf with the exception of periods of two or three weeks each in the spring and fall while the change is taking place. Each is dormant while the other is active so there is no tendency for one to crowd out the other.

Bermuda is the easiest turf grass there is to grow over most of the Southland and one of the most difficult to eradicate when once established. On account of its long dormant season in winter it is often classed as a pest and much labor has been spent in vain attempts to kill it out. Now instead of fighting Bermuda it will be much better to keep it and plant in the Poa bulbosa. It has been a common practice for several years to seed in the Bermuda turf in the fall some quick growing grass like redtop or rye grass to give a green color over winter. This improves the appearances of the turf temporarily but must be repeated each fall as these northern grasses will not survive the summers. Poa bulbosa hibernates in summer like a bear in winter and so is not killed by the summer heat.

Methods of Planting

Future experience will probably improve on planting methods with this grass. I have had good results from simply cutting the Bermuda down close, raking it with an iron rake and then sowing the bulbs. In Southern California they are using a Bermuda renovator which cuts the Bermuda sod into a fine seed-bed for the bulbs. Another method would be to scatter the bulbs over the old turf and top-dress with a sandy loam soil or compost. The bulbs should never be covered very deeply as the nature of the grass is to form its crown right at the surface.

As the bulbs will not grow in the summer there is nothing to be gained by seeding before September. The sooner the planting is done after that the better.

Habit of Growth

It is the top-sets or bulblets that are on the market as the grass produces a fairly good crop of these under Oregon climatic conditions. For all practical purpose these bulblets may be considered the same as seeds. Three pounds of the bulblets to the thousand square feet of area will give a perfect stand the first year. Lighter plantings will give just as good results in time as the grass forms numerous tillers at the base, and gradually spreads. As soon as the ground gets filled with the underground bulbs it makes a complete covering of the surface as soon as it begins to grow in the fall.

Economic Value for the South

Poa bulbosa will greatly improve the appearance of southern golf courses at a time when the northern tourist is most hungry to see something green. From our present knowledge I would recommend its use on tees and fairways. Unless the putting greens are already in Bermuda grass I would not advise its use alone for that purpose. It is being demonstrated that certain strains of creeping bent do just as well in the South as they do in the North and there will be many creeping bent greens planted down that way in the next few years. As creeping bent is superior to Bermuda as a putting turf that is probably the best grass to work for and that will not need the Poa bulbosa.

IN MEMORIAM

MANY friends in the golfing fraternity mourn the passing of Charles R. Huddle, green keeper at the Crestview Country Club, Wichita, Kansas.

Mr. Huddle, who was an active member of the National Association of Greenkeepers of America, died on August 12th at the Wesley Hospital, Wichita, from the results of an accident which occurred two months previous while discharging his duties at the club. In suddenly straightening up from a stooping position, his head struck an overhanging rack of iron tools, resulting in a fractured skull and a brain abscess.

Mr. Huddle was the first man to introduce creeping bent to the Wichita golf courses, and it is rapidly increasing in popularity in the Wichita district. He was an experenced landscape gardener and his greens at Crestview are considered some of the finest in the West.

Our association has lost a most valued member, one who was loved and honored by the members of his club, and all who were so fortunate as to be counted among his friends.

Mr. Huddle is survived by his widow, Mrs. Bessie Huddle, a sister, Mrs. A. M. Hartman of Council Grove, and a brother, William of Nebraska.