

The History of *Poa Bulbosa*

By 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 blue-grasses 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



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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 experienced 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.