

Putting Tests Upon Bent Grasses

By John Monteith, Jr., and Kenneth Welton

In this number of the Bulletin the ratings are given of various grasses to be used for putting green purposes based on a summary of reports on a series of demonstration turf gardens. The reports from these gardens that have been summarized over a period of 4 years have been based on ratings which have been assigned by greenkeepers and others interested in the maintenance of turf. From the greenkeeping standpoint such summaries are instructive in that they show how these various grasses respond to varying greenkeeping practices under a wide range of soil and climatic conditions. The rating of the grasses in the demonstration turf gardens is based on factors which are regarded as the important features of putting green turf by those who make out the reports.

The final test of any putting green grass is its ability to produce a good putting surface which at the same time is durable. The plots of different grasses at the demonstration turf gardens were neces-



Billy Burke (left) and Johnny Farrell (right) testing the putting qualities of turf at Arlington turf garden

sarily made too small to provide a large enough area for a good test of putting qualities. At the Arlington turf garden and at the Mid-West turf garden, however, the Green Section has provided plots of the important turf grasses which are sufficiently large to provide good tests of putting qualities. At the Mid-West turf garden these plots are on a uniform grade. At the Arlington turf garden 1/3 of each plot is on a 6 per cent slope, 1/3 on a 3 per cent slope, and the remaining 1/3 is on a 1 per cent slope. These 3 different grades furnish an opportunity to test the influence of the grass on putting on quite different slopes. These plots have been in turf for several years and have aroused much interest among golfers who have visited them, for they give a fair comparison of the different grasses for putting green purposes. Many of the opinions for and against some grasses are unfortunately unreliable, because they are based on comparisons of grasses grown on different courses and often under quite different conditions. The cultural methods as well

as soil conditions greatly influence the quality of the turf produced by any grass on two different courses, and therefore comparisons of grasses on various courses usually leads to erroneous conclusions. Furthermore, much of the criticism of grasses is misleading since few golfers recognize the difference between the different species of grasses, much less the different strains within a single species. Consequently there have been many generalizations which have merely added to the confusion when those interested in turf problems have tried to arrive at any conclusion as to just what kind of grass golfers prefer.

Many of the golfers who have visited the two Green Section turf gardens have expressed opinions on the relative merits of the different putting green grasses which were not in accord with many of the popular opinions as to their putting qualities. It was therefore decided to invite some good golfers to rate the putting qualities of the grasses at Arlington and to compile the ratings, with the hope that such positive opinions might serve as a guide in formulating some definite opinions as to the type of turf which golfers prefer for putting green purposes. At the time of the National Capital Open held in November at the Kenwood Golf and Country Club, near Washington, a number of the professionals in attendance visited the Arlington turf garden and putted on the different grasses and then chose those which they considered the three best. The ratings are consolidated in the table below.

	1st choice	2nd choice	3rd choice
Velvet bent.....	10	—	—
Metropolitan creeping bent.....	—	3½	1½
Washington creeping bent.....	—	2½	3½
Colonial bent.....	—	2	3
German mixed bent.....	—	1	1
Seaside creeping bent.....	—	1	1
Virginia creeping bent.....	—	—	—
Columbia creeping bent.....	—	—	—

Two varieties of bent did not receive a single vote. The Metropolitan and Washington were considered by one golfer as of equal putting quality for second choice. Therefore in preparing the table this vote was divided to give each grass one-half for second and one-half for third place. The colonial and German mixed bent plots in two other cases were considered as of practically equal merit for third place, and in making the table each of these votes was given a value of one-half.

The series of putting green plots includes 10 representative grasses, namely, velvet bent (strain No. 14276), colonial bent, German mixed bent, fescue, annual bluegrass, and the following creeping bents: seaside, Washington, Metropolitan, Virginia, and Columbia. During the previous summer the fescue and the annual bluegrass plots had been badly damaged and the turf had not fully recovered at the time this test was made; therefore they were not considered in the ratings. The test was confined to 8 plots of bent, 5 of which (velvet bent, Metropolitan, Washington, Virginia, and Columbia creeping bents) had been planted with stolons, while 3 plots (colonial bent, German mixed bent, and seaside creeping bent) had been planted from seed. Some of these bents had occasioned much more difficulties in maintenance during the summer months than had

the other bents, but all scars had recovered by the time the tests were made and the grass in all of the plots was in excellent condition. Therefore the test actually represents a comparison of the different bent grasses in topnotch condition. Recent heavy rains had made the ground somewhat soft, so that footprints were more in evidence than usual, but these were not serious enough to noticeably affect the putting. The 10 professionals who cooperated in making this test were as follows: Tom Boyd, Billy Burke, Wiffy Cox, Abe Espinosa, Johnny Farrell, John Flattery, John Golden, Tom Kerrigan, Willie Macfarlane, and Horton Smith.

These players unanimously chose velvet bent as the best putting surface. This velvet bent is a selection that was planted with stolons. The second and third choices were much more difficult to make. It is interesting to note that two creeping bents (Metropolitan and Washington) took second and third places, respectively, in the estimation of this group of players. Colonial bent was given fourth place and German mixed bent (which in this plot is chiefly colonial bent with a small amount of velvet bent appearing in only small patches) was tied with seaside creeping bent for fifth place. The two other bents (Columbia and Virginia), although at the time in as good condition as it seemed possible to get them, were not placed among the three best by a single player.

Since seasonal conditions have a decided influence on these different grasses it is most likely that this same group of players would have rated the grasses somewhat differently at other times during the season when some of the grasses were not in as good condition as they were at the time this test was made. Similar tests throughout the season would give a far more definite rating to these grasses. Nevertheless they are interesting in showing the unprejudiced opinions of good players based on a comparison of the grasses when they were all in good condition.

It is interesting to compare this table of ratings with the ratings obtained from greenkeepers based on the performance of the grasses from the greenkeeping standpoint, as indicated in the table on page 222 of this number of the Bulletin and in the summary of the demonstration gardens over a three-year period in the December, 1931, number of the Bulletin. The greenkeepers' ratings of the grasses over a period of four years have given the highest rating to three creeping bent grasses in the following order: Metropolitan, seaside, and Washington. The group of colonial bent grasses and the German mixed bent (which is chiefly colonial bent) have been given similar ratings by the greenkeepers over a period of four years. Their position is just below the group of three best creeping bents. The strain of velvet bent used for this putting test is rated in the demonstration gardens by greenkeepers in a position somewhat below the colonial bent group. The lower rating of the velvet bent by the group of greenkeepers as compared with the group of professionals was due to the fact that the greenkeepers' ratings were lowered by the difficulty in securing and maintaining a good stand of this grass throughout the years in which the reports have been made. It must be remembered that the professionals rated the velvet bent when it was at its best and they did not have to make any allowance for the difficulties in keeping it in this condition. Aside from the rating of velvet bent it is indeed encouraging to note that the ratings of the greenkeepers and the players are so closely in accord.

Many times one hears the criticism that those interested in the maintenance of courses judge grasses with different standards than do the good golfers. This is not borne out in the comparison of the ratings made with the two different standards in mind. In many cases the differences between the viewpoints of the golfer and greenkeeper are not due to different standards but due to a failure of many of the critical golfers to distinguish between different grasses.

One of the common mistakes among golfers, and indeed unfortunately also among greenkeepers and others whose business it should be to know more about such matters, is due to the common classification of turf by the golfers into two classes—seeded greens and stolon greens. A seeded green may be seeded to a number of grasses such as redtop, fescue, colonial bent, seaside bent, mixed bents, or other grasses. In this arbitrary division, however, most golfers refer to seeded greens as meaning greens seeded either with colonial bent or German mixed bent. When one refers to stolon greens it usually brings to the mind of the golfer the greens of Virginia creeping bent, since this strain has been used most widely for planting greens with the stolon method.

It is interesting to note that this group of players placed three grasses planted with the stolon method at the head of the list, followed by three bents planted with the seeded method. The Virginia creeping bent planted with stolons which was most widely used commercially in this country did not receive a single favorable rating even though it was in excellent condition. This clearly indicates that, for putting purposes, the players can readily distinguish between the different strains of creeping bent. The Columbia and Virginia strains, against which the players discriminated, made an equally unfavorable showing in the ratings of the demonstration gardens. These ratings add further evidence to prove how meaningless are the criticisms of individuals who recognize only the two types of putting green turf—seeded and stolon.

Parasitic control of injurious insects.—In the Government laboratory at Brownwood, Tex., the Bureau of Entomology has propagated a tiny insect, which is hardly visible, for the purpose of helping control the nut case-bearer, an insect pest prevalent in the pecan groves of the South. The little insect, known as *Trechogramma minutum*, produces twins and multiple sets of twins inside the eggs of other insects. It is planned to raise the insects in large quantities for liberating in orchards to determine the possibility of controlling the oriental fruit moth also. At Moorestown, N. J., two small wasplike insect parasites are also being propagated as a possible control of the fruit moth. These wasps lay their eggs in the grub of the moth, and as the wasp grub matures inside the moth grub the latter is devoured. Parasites of a similar nature are also being tried on the codling moth, which produces worms in apples. This method of checking insect damage on golf courses is being thoroughly tested in the vicinity of Philadelphia, where new parasitic insects are being propagated to prey on the grubs of the Japanese beetle.

In general it is true that the more fertile the soil is kept the fewer weeds will infest the turf.