

Golf Grasses

Chapter III—The Bent Family

By LYMAN CARRIER

Editor's Note:—Mr. Carrier was for many years connected with the U. S. Department of Agriculture, as agronomist in pasture and forage crop investigations. His work with the U. S. G. A. Green Section established the value of vegetative creeping bent for putting greens.

MUCH has been written during the past fifteen years about bent grasses for golf courses. Practically everything has been said that can be said. Still a great deal of confusion exists in the minds of greenkeepers as to the relative merits of these different grasses. Until this confusion is cleared up the subject cannot be over-discussed. The bent grasses are by far the most important group of plants known today for the production of fine turf, not only for golf courses but also for lawns, baseball, foot ball, polo fields and tennis courts.

The subject is extremely complicated. Botanists, in spite of a large amount of careful research, are not at all in agreement as to the proper identification and classification of the various species which are found in this group. It is small wonder then that the layman is confused. While the term "bent grass" has been applied in Europe to many different plants, we in America have restricted its use to the grasses classified by botanists as the genus *Agrostis*.

The classification which follows is based on the most common usage rather than on any particular botanical authority. The common names are more definite in meaning than the scientific which are given in parenthesis. In other words the common names are more scientific than the scientific names. This is due to the penchant of botanists always to give the credit for a scientific name of a plant to the one who first described it. In the case of the *Agrostis* species there is much doubt as to what grass the earliest botanists were describing.

There are four species of bent which are of prime importance to greenkeepers and these are the only ones which will be discussed here. They are redtop (*Agrostis alba*), Rhode Island bent (*Agrostis vulgaris*), Creeping bent (*Agrostis stolonifera*), and velvet bent (*Agrostis canina*). Some of the more common of the other names which have been used for these species will be mentioned in the discussion of each of the four species.

Redtop

This is the well-known agricultural grass. It grows rapidly from seed and makes a beautiful greensward of seedling plants. As it grows older the plants become coarse and many die out leaving a sparse, unsightly turf. On account of its being plentiful and cheap the seed is often used in lawn mixtures and is combined with bluegrass for fairway seedings. Redtop alone seldom lasts

longer than two years and in some large regions it does not survive that long.

In the early days of golf course construction it was an all too common practice to seed putting greens heavily with redtop and turn the course over to the club while the grass was still in the seedling stage looking like a "joy forever." When the change came in due time the greenkeeper was often blamed for the failure of the turf when it was not his fault at all. While redtop is still used a great deal in fairway seedings it will be more satisfactory in many cases as pointed out in a previous article to use some of the more expensive bent seed in its place.

Redtop is also used in the South for winter putting greens being seeded each fall on Bermuda turf. Its good and rapid germination makes it especially suitable for that purpose although some find it susceptible to brown-patch and prefer bluegrass or rye grass.

Rhode Island Bent

The name given this grass has no special significance. There never was very much seed of it harvested in New England and for many years none at all. During the War when other sources of supply were cut off a small industry started up in Rhode Island but the amount harvested is insignificant in comparison to supplies from other regions. Seed of Rhode Island bent makes up the bulk of the bent seed which is imported into this country from Europe and sold in the trade as South German Mixed Bent. It is also identical with the Colonial Bent which comes from New Zealand. There are more than two hundred tons of *Agrostis vulgaris* seed imported into this country each year which testifies to its popularity.

Rhode Island bent is medium fine in texture and makes turf which will stand a lot of trampling. It spreads slowly by means of short underground rootstalks from the crown. A single plant growing naturally will make in a few years a tuft of six inches or more in diameter. When kept closely cut as on a putting green it appears to spread faster but as a rule it cannot be considered a creeping grass. Certain strains have been found which take root at the joints of the stems but there is no certainty that these are pure *Agrostis vulgaris*. Some



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authorities consider them cross-bred strains between *Agrostis vulgaris* and some creeping form of bent.

The chief fault to be found with Rhode Island bent is its inability to keep out or to drive out weeds. A pure stand of Rhode Island bent is about as satisfactory as a putting turf as any grass known but it takes constant care and weeding to maintain a pure stand. That is the main reason why the creeping bents have been used so extensively in the past few years.

Creeping Bent

A creeping plant is one which spreads by rooting stems or stolons above ground. So in the case of the bent grasses the term "creeping" should not be applied to any sorts which do not have this ability to take root at the joints of the stems.

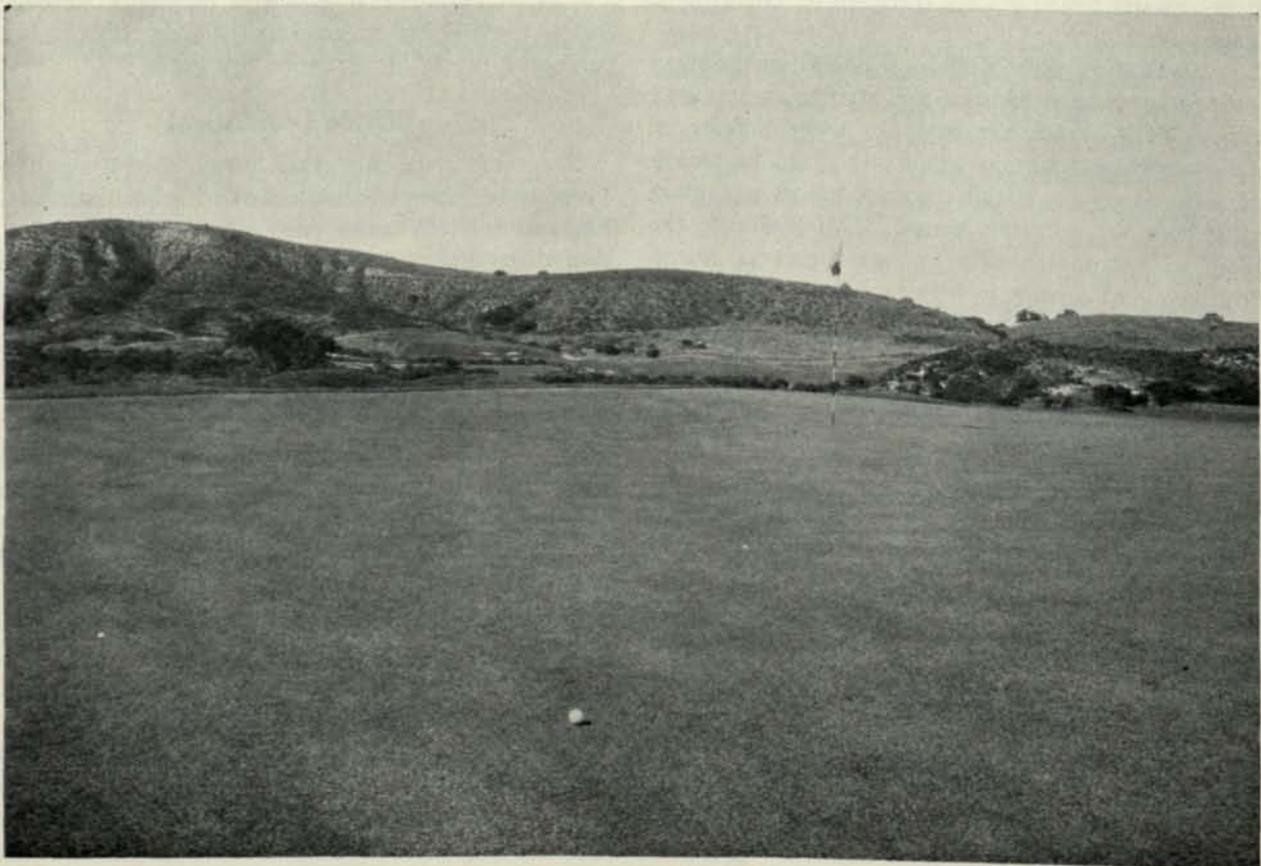
There are hundreds of different strains of creeping bent. It is one of the most variable species of grasses that has ever been studied. Just as all horses are classified as one species but having a wide variation between a Belgian Draft and a Shetland Pony, so in creeping bents there is a vast difference between strains as to their turf producing qualities. Another feature which has not been properly understood is that these strains behave differently when grown under different conditions. A first class turf producer in one locality may not be satisfactory in another.

The value of creeping bent was not understood until the United States Department of Agriculture in 1916 began selecting and developing pure strains of this species. Of the many strains selected and tested at the Arlington Turf Garden, two stand out as distinctly superior to all the others. These two strains were named the Washington and the Metropolitan. They are similar in habit of growth and appearances. Grown on some soils it is almost impossible to distinguish one from the other. Under other conditions they are distinctly different. Uncertainty exists today as to which is which.

Characteristics of the Washington Strain

The Washington is the more vigorous of the two. It will thrive under more adverse conditions. It makes a thicker turf which will stand more rough usage. When grown on very rich soils or kept highly fertilized the Washington has a tendency to coarseness. The remedy for this is simple—it should be given a starvation diet. Top dressings should be of sandy loam without compost or fertilizer until the grass shows by its appearance it is suffering from lack of food. When treated in this manner the Washington will be found to be fine enough in texture to suit the most critical golfer.

The Washington strain has proved to be the only one which is planted vegetatively that will thrive under



*The famous 12th at El Caballero, Los Angeles (Reseda) Calif.
This green is Cocos bent planted from seed. Note how the ball stands up.*

the adverse conditions south of the Ohio River and in the dry country west of the Mississippi. It requires less water than any other creeping bent so far tried.

Characteristics of the Metropolitan

The Metropolitan does not become coarse in texture under any conditions. For that reason it is recommended for the rich black soils of the North Central States. Greenkeepers in the North who can not resist the temptation to be constantly fertilizing and watering their greens have better results from the Metropolitan than they do from the Washington. It is slightly lighter in color than the Washington.

History of Washington and Metropolitan Strains

The Washington strain was selected by the late Dr. C. V. Piper from a small patch of turf on one of the greens at the Washington Country Club near Washington, D. C. These greens were not watered artificially at the time and Dr. Piper was impressed by the fact that this particular patch of turf remained healthy and green during hot, dry weather while the rest of the turf became brown and seared.

The Metropolitan was developed from a small piece of turf which George Stump of New York sent to me for identification. It came from a putting green on one of the older courses in the Metropolitan District. As it differed from the other strains we had at Arlington at the time I put it in the green house and multiplied the stolons as fast as possible. The piece of turf which was the start of this strain was not over an inch in diameter.

An idea of the relative physical vigor of these two strains may be learned from an incident at my nursery in 1925. We had two rows of Metropolitan growing alongside some Washington in a field which was not piped for artificial watering. A hot dry week in early June killed out the Metropolitan completely while the Washington was not injured in the least.

Seaside Bent Seed

In 1924, I discovered, in the County of Coos in Oregon, quite large areas of creeping bent which were producing seed. This seed was harvested and put on the market under the name of Cocoos. It proved to be a pure strain which came true to type no matter where used and so the term "Cocoos" was registered with the U. S. Patent Office and the Commissioner of Patents of Canada. No other seed can be legally sold under that trade-mark. Since this seed has become popular for putting greens a number of seed harvesting operations have sprung up in various parts of the country. Seed analysts are unable to identify these different strains of creeping bent seed and experience considerable difficulty in distinguishing them from ordinary redtop seed. They report them all as *Agrostis maritima*, or "seaside bent." In view of this situation each producer should be willing to give his product a distinctive name. Pur-

chasers have the right and should for their own protection insist on knowing the source of these strains of seed. Buying creeping bent seed regardless of source is like buying dogs regardless of breed. The chances are heavily against your getting what you want. Any producer of creeping bent seed should be willing on request to furnish a list of the users of his seed so the purchaser can investigate and see if the turf is what he desires.

This is a matter of more importance than it may seem on first thought. Those who know their grasses are convinced that the use of these creeping bent seeds may be destined in the near future to displace vegetative planting with stolons, and there is a strong movement under way among certain seedsmen to discourage the use of definite trade names and have these seeds all sold under the term "seaside bent." The purpose of this propaganda is obvious. The supply of these seeds is limited at the present time and, if they are all thrown onto the market under the same general name, the inferior strains could be sold on the reputation made by the better sorts.

It is futile to try to distinguish botanically between the strains of creeping bent which are planted vegetatively and these so-called "seaside strains." I have tried vainly for years to have some botanist give me a valid reason for considering them as belonging to different species. The scientific name "*maritima*" was first used for a variety of creeping bent, that is, *Agrostis stolonifera*. It would simplify matters if seed analysts would go back to this classification or drop the misnomer "seaside" altogether.

Velvet Bent

This is the finest in texture of all the bent grasses and under conditions favorable to its growth makes excellent turf. Many of the greens in New England are nearly solid velvet bent. It has been mistaken for red fescue many times. It is softer than red fescue and the blades on close examination are flat while the fescue blades are nearly round or bristle-like.

There is no pure seed of velvet bent on the market. The South German Mixed Bent usually carries some velvet bent seed, the amount varying from a mere trace to as high in some cases as fifty per cent.

Many selections have been made and serious attempts to plant it vegetatively. But it does not stand shipping well and its slow growth makes it unsatisfactory. Most strains of velvet bent are susceptible to the brown patch disease of turf and it is scarcely worth while to try to grow it where this disease is troublesome.

A Correction

In a previous article I made the statement that meadow fescue has no special value for fine turf. This was based on my experience with it in the East. Since that was published I have learned that meadow fescue is being used extensively in Southern California in a fairway mixture with satisfactory results.