

## Classification of Redtop and the Common Bent Grasses

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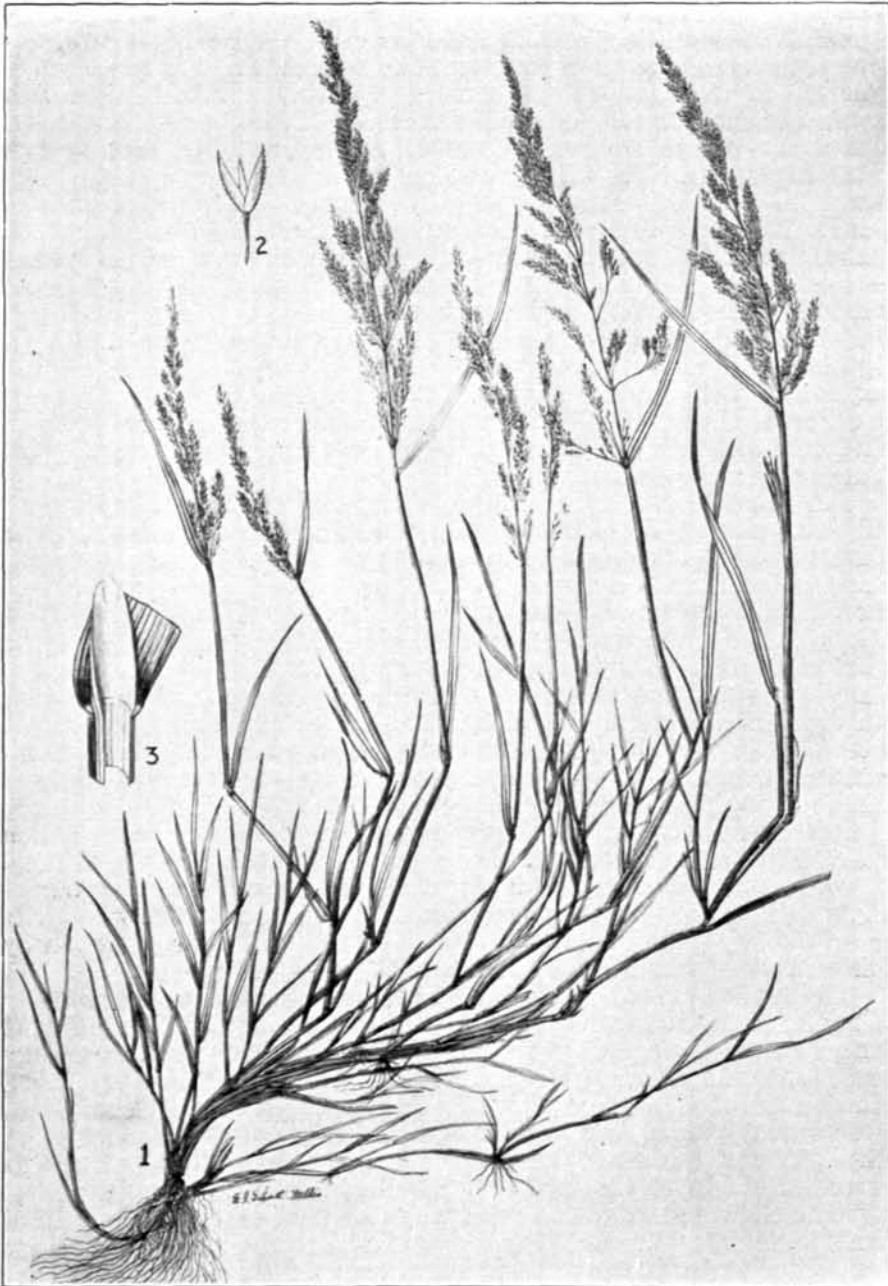
Classifications and names are devised primarily for convenience in handling or in making reference to things. Grasses are frequently classified as hay grasses, pasture grasses, putting green grasses, fair-way grasses, and under other headings based on the purpose for which the grass is to be used. Another classification is on the basis of geographical distribution. Of all the many classifications of plants, that of the botanist is of most general use. In making the botanist's classification, the flower parts of a plant are of prime importance, but the many characteristics of the seed, leaf stalk, and root are also given consideration. Unfortunately the dividing lines between groups in any classification are more or less artificial, and there are always members which seem to straddle these lines and cause confusion. An example of this is the arrangement of grasses into the two groups northern and southern grasses. Bermuda grass is readily recognized as a southern grass and red fescue as a northern grass. However, such grasses as annual bluegrass and crab grass, which thrive in both the North and the South, can not be separated by such a classification. In spite of these difficulties there are admittedly many occasions when it is convenient to use such an arrangement. Likewise the botanist also find many hindrances in establishing sharp lines for separating his different groups. In some groups of plants he finds a greater number of intermediate forms than occur in other groups. The bent grasses offer an example of much variation, which has given botanists a great deal of difficulty in establishing dividing lines between groups.

When any group of plants is classified by botanists the different divisions are given names for convenience in reference. A large group is termed a genus, and this is then subdivided into species. Distinct groups belonging to a single species may be referred to as varieties. The reasons for such a classification are complex and can not be fully explained in this brief discussion. The botanist uses a Latin name to designate both the genus and the species and occasionally to denote varieties. Species and varieties of common plants are usually given common names, and sometimes a common name is used for a whole genus. The Latin, or scientific name, remains the same everywhere, but the common names vary in different countries where different languages are used and frequently vary in different sections of the same country. The scientific name *Agrostis* is given to the genus containing the bent grasses and also redtop. The common name "bent" is applied to all but one of the subdivisions or species of this genus. This one exception is the species known under the common name redtop. The grass usually known as velvet bent is a species to which the botanist gives the scientific or Latin name *Agrostis canina*. As with all scientific names, the first name, *Agrostis*, is the name of the genus and the second, *canina*, designates the species. Several selections have been made of especially promising individual plants of velvet bent. These selections, known as strains or varieties, have, in a few cases, been given common names, but are not sufficiently distinct botanically to warrant scientific recognition. Thus the Acme velvet bent and Highland velvet bent are two distinct strains of a single species, *Agrostis canina*.

Names, whether scientific or common, are applied to objects for convenience in referring to them verbally or in print. As long as each person in a group knows what one of them may be referring to, it makes little difference what name he uses. However, if two persons in referring to an object call it by different names and each is ignorant of the name the other uses, it naturally follows that each thinks the other is talking about something entirely different. Local names for plants frequently lead to much misunderstanding and futile argument. The bent grasses furnish an example of the confusion in both common and scientific names. One needs only to glance through a few seed catalogs to discover the wide range of names now in use for the same grass. For example, a single species of bent grass is found to be designated by the following names: Rhode Island bent, colonial bent, browntop bent, browntop, fine bent, Waipu bent, Prince Edward Island bent, Astoria bent, *Agrostis tenuis*, *Agrostis capillaris*, and *Agrostis vulgaris*. Anyone who is not acquainted with grasses naturally assumes that these names refer to different kinds. Seedsmen and those who use the grass in question have been confused and often misled by the many names under which it appears on the market.

For greatest convenience in any one country, a plant should have only two names, the common name and the scientific name. The common name is largely determined by popular usage. The scientific name is determined by botanists who have made a special study of the plant, or group of plants to which the one under consideration belongs. Since the work of the Green Section constantly brings its staff in contact with the confusion of names of the bent grasses, many seedsmen and others handling these grasses have urged that our organization attempt to obtain the opinions of those who are most interested in this subject for the purpose of presenting and recommending adoption of the names which seem most convenient and simple in the light of present knowledge. No classification or group of names can be regarded as permanent, for when new information is available some changes become desirable. However, in the interest of better understanding, it is generally admitted that some names might well be dropped from common usage, and that those who write or talk about bent grasses would materially clarify the situation by using only one common name for any one accepted species.

The species of bent which has perhaps had the greatest superfluity of names is the one known generally in this country as Rhode Island bent, colonial bent, or browntop. The earlier and most commonly used American name was Rhode Island bent, since in the United States seed of this grass was first harvested in Rhode Island. In more recent years, seed of this species having been raised also in other regions, seedsmen have made a practice of designating the source of origin of the seed they handle. However, a geographical name to show the origin of seed, when coupled with a geographical common name, makes a clumsy and confusing combination, which has been objected to by dealers and purchasers of the seed. There are thus such combinations as New Zealand Rhode Island bent, Prince Edward Island Rhode Island bent, and Rhode Island Rhode Island bent, which are obviously awkward. Furthermore, the Rhode Island bent seed years ago fell into disrepute, due to adulteration, through ignorance or intent; and even though this fault has been largely



Creeping bent (*Agrostis palustris*). 1. Portion of flowering plant (about one-third natural size). 2. Spikelet (much enlarged). 3. Ligule (much enlarged).



Colonial bent (*Agrostis capillaris*)

remedied many of the seedsmen prefer some other name to avoid any lingering prejudices. The various common names already used, together with some new names, were carefully considered by officials of the United States Department of Agriculture and the United States Golf Association Green Section. It was finally decided that the choice should best be from three names already in use, namely, Rhode Island bent, colonial bent, and browntop. All the arguments which had been raised for or against each of these three names were briefly enumerated and a mimeographed sheet containing the summary was submitted to 16 seedsmen handling large quantities of this grass, 16 representative greenkeepers and 16 chairmen of green committees in the regions where the grass is used, and 5 interested individuals at State experiment stations or other institutions. Four greenkeepers and 4 chairmen failed to return the sheet indicating a preference. Of the 45 who expressed their choice, 40 were in favor of the name "colonial bent." The seedsmen were unanimously in favor of this name. Two voters suggested new names, 2 were in favor of Rhode Island bent, and 1 in favor of browntop. It was accordingly decided that the name colonial bent would be adopted by the United States Department of Agriculture as the common name which it would use for this grass.

The name colonial bent had indeed been suggested several years previously, due to historical associations which attended the introduction of the grass into various regions. The grass is supposed to have been introduced into New England and Nova Scotia by the early colonists, who, in embarking from England, brought the seed with them in quantities of dried grass used as bedding. When the bedding was changed, the stuffing was scattered about, and the seed so distributed soon germinated in the new soil, thus establishing the grass in colonial territory. It is likewise supposed to have been carried from Canada by colonists moving to New Zealand, and it probably also went to the west coast of the United States with early settlers. Since the name "colonial" in itself has no particular geographical significance, it can be conveniently combined with geographical names to designate the special source of the seed, as, for example, New Zealand colonial bent, Rhode Island colonial bent, Prince Edward Island colonial bent, and Oregon colonial bent.

The various classifications of the genus *Agrostis* have included many species which were apparently not clearly defined. This has, no doubt, been due partly to the fact that the bent grasses have not been regarded as of much economic importance. In recent years the increased attention given to fine turf, especially for putting greens, has stimulated a much greater interest in this group of grasses. The botanists who have recently worked with the group now divide those grasses in it that are used commercially into four major groups. There is still some dispute as to the scientific name to be applied to each group and to the subdivisions to be made under each group. For practical purposes it is, however, significant that there is an agreement as to the main subdivisions. Dr. M. O. Malte, in his classification, which was reviewed in the November, 1928, number of the Bulletin, recognizes three species, one of which he divides into two distinct groups. He therefore has four major subdivisions. These same four groups are listed in a recent book by Charles C. Dean, of the Indiana Department of Conservation. As explained by Prof. F. H.

Hillman, in his article "Identifying Turf-Grass Seed" in this number of the Bulletin, the seed analyst uses entirely different characteristics from those of the botanist in making his distinctions between groups. Using seed characteristics only, the seed analysts also can separate these same groups. Those who study the characteristics of these grasses in turf are also able to distinguish these same four groups without taking into consideration the characteristics used by the botanist and the seed analyst. Even though other subdivisions are recognized by botanists, seed analysts, and turf specialists, it seems significant that these same groups should be set apart by specialists using entirely different methods, and it seems very reasonable to assume that the other groups which have been set up by different individuals as distinct species are in reality superfluous and tend merely to confuse those who are working with these grasses. The Green Section, therefore, accepts these four groups in its classification of redtop and the bent grasses, and until new information seems to justify a change it will, when referring to these grasses, use the common names or the scientific names given in the accompanying list in heavy type to designate the grasses coming within the four groups. The scientific names appear in italics; they are the scientific names being used by Dr. A. S. Hitchcock, agrostologist of the United States Department of Agriculture. Under each division are given also the other common and scientific names which have been used more or less frequently for the grasses within the groups.

#### A GROUPING OF REDTOP AND THE COMMON BENT GRASSES

##### 1. Redtop

##### *Agrostis alba*

Whitetop, English bent, southern bent, herd's grass, white bent, marsh bent, florin.

*Agrostis dispar*, *A. stolonifera major*, *A. palustris* (misapplied).

##### 2. Creeping bent

##### *Agrostis pulustris*

Fiorin, carpet bent, seaside bent.\*

*Agrostis alba maritima*, *A. maritima*, *A. stolonifera compacta*, *A. stolonifera*.†

##### 3. Colonial bent

##### *Agrostis capillaris*

Rhode Island bent, fine bent, browntop, Waipu bent, English bent, furzetop, Burden's grass, Prince Edward Island bent, dew grass, Astoria bent.

*Agrostis vulgaris*, *A. alba vulgaris*, *A. tenuis*.

##### 4. Velvet bent

##### *Agrostis canina*

Brown bent, dog bent.

In addition to the seed of these different species on the market there are available mixtures containing seed in varying proportions of the different species. One of the best known of these mixtures is the seed known in the trade as German bent, German mixed bent, or South German mixed bent. Seed sold under these names usually contains all four of the species listed above. When this mixed seed is sown on a green the appearance of the turf during the first two or three years usually very closely resembles turf produced from colonial bent seed. Even though the velvet and creeping bents be present in only relatively small amounts they begin to appear in distinct patches throughout the turf when it is several years old. In time the creeping bent and velvet bent may practically crowd out all the other species

\* Some Seaside creeping bent is sold under the trade name Cocos bent.

† *Agrostis stolonifera* is still another species of *Agrostis* which, not being on the market nor of economic importance, does not come within the scope of this article.

of bent. Some greens planted with mixed bent seed years ago are at this writing composed almost entirely of velvet bent or creeping bent. As new sources of bent seed are developed, it is likely that there will be on the market additional mixtures of seed of the different bent grasses. As an example, in regions where colonial bent and creeping bent are both produced commercially there is bound to be some seed on the market containing mixtures of these two grasses, since the seed of the different bents can not be separated by any means at present available for commercial purposes.

In recent years there have been selected a large number of strains of creeping and velvet bent for putting green purposes. These are selections of individual plants which are propagated by the stolon method. In some cases these selections have become so popular that they are known almost entirely by the strain name. They are, as selections, on a par with the horticultural varieties of roses, apples, or other cultivated plants, being distinguished by certain characteristics which are not distinct enough to class them as botanical species or varieties. Seed of these strains is not available for commercial use. Some of the strains of creeping bent which are well known are the Washington, Metropolitan, Virginia, Columbia, Inverness, and Ekwanok. Examples of named strains of velvet bent are Capitol, Highland, Acme, and Kernwood. All of these strains are propagated by the stolon method and no seed of any of them is at present available commercially. There has been some misunderstanding with regard to the application of the name creeping bent on account of the erroneous idea held by some that it alone of the bent grasses possesses the stoloniferous or creeping habit. As a matter of fact, the creeping characteristic is more or less common to all the species of *Agrostis*, including redtop. Any of the commercial bents may, indeed, be propagated by the stolon method.

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Many insects have a marked ability to make themselves at home in the place wherever they happen to be carried, by flight or through commerce. Many of our present-day crop pests formerly fed on wild plants, but when the land was planted to cultivated crops they not only changed their diet to man's food but prospered on it. The Colorado potato beetle is a good example. This beetle formerly lived on a wild nettle in the foothills of the Rocky Mountains, and when the potato was introduced into the region the bug apparently adopted it, and in 20 years had spread to the Atlantic Ocean.

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The average weight of roller best suited for putting greens is probably between 150 and 200 pounds, depending more or less on the type of soil and the diameter of the roller in relation to its length. A roller 18 inches in diameter should weigh approximately 100 pounds to each foot in length. If the diameter is less than 18 inches, the weight to the linear foot should be reduced. Light or sandy soils require more rolling and the use of heavier rollers than heavy soils.

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A rainy day is a good day for the greenkeeper to be out on his course. It is then that he can most readily detect areas that need improved drainage.