Identifying Strains of Creeping Bent

During the past fifteen years there has been much interest in the selection and propagation of different strains of creeping bent for golf course turf. On old putting greens which were planted with mixed bent seed many years ago, there usually appear more or less circular patches of creeping bent with different characteristics as regards color, fineness of leaf blade, density of turf, and other qualities, marking these particular patches as desirable or undesirable turf for putting greens. These distinct patches probably each came from a single seed of creeping bent contained in the original mixed bent seed. The fact that single plants were able to spread out to form such large patches and were able to crowd out all other grasses in so spreading has indicated the vigor of some of these individual plants and suggested the method of developing them in order that an entire green, or even an entire course, might be planted with a uniform turf originating from a single plant. Plugs from desirable patches were torn apart and planted in nursery rows apart from all other grasses. Stolons from such nursery rows furnished material for planting greens.

Turf produced from seed is composed of countless individual plants each with certain more or less distinct characteristics, even though they be of the same general appearance. With the stolon method of planting, however, the turf all comes indirectly from one parent plant by the mere replanting of shoots from the original plant. This method is quite similar to the method used in strawberry culture. When a new variety of strawberry is produced from seed, it is propagated by runners cut from the plant. If plants are grown from seed of a particular variety of strawberry, they will not be exactly like the variety from which the seed was obtained, due to the genetical factors introduced by seed. The runners, however, do not vary, for they represent actually the one plant without any involved genetics. In a similar manner seed from a Baldwin apple does not produce a Baldwin apple tree, but buds or shoots taken from a Baldwin apple tree when grafted to any wild stock will produce a Baldwin apple. It is sometimes difficult for one not acquainted with plant life to grasp the distinction between these two methods of reproduction, because he is familiar with only the method common to the higher animal kingdom, and this always involves individual variation due to crossing.

Every viable seed of a plant subject to propagation from the vegetative parts has the potentialities of a new variety or strain. Creeping bent, like apples and strawberries, shows endless variations as to individuals, but only a relatively few of them have been picked out for propagation on a large scale. Identification of creeping bent strains is therefore limited to these few strains which have been grown on any extensive scale. Occasionally some turf enthusiast wandering about a golf course picks up a conspicuous piece of creeping bent sod and sends it to the Green Section for information as to strain. Obviously it is impossible to identify the countless thousands of different creeping bent plants that occur on the golf courses of this country where mixed bent seed was used. Identification and naming of varieties is of value only in the few cases where the varieties have been tested and have some known record. In the few

cases of creeping bent strains, such as the Washington, Metropolitan, Virginia, Columbia, and similar well-tested strains, an identification is of value because of the many tests that have been made with them.

Bent Identification Rows at the Arlington Turf Garden

Samples of bent grass received by the Green Section for identification are planted in the rows shown in the illustration, where the samples are grown beside plugs of known strains of bent. Each plug is marked with a wooden label. After the samples have developed sufficiently they are compared with the Green Section's stock. Identification is not attempted until the stolons have grown several inches from the original sample.

If a club purchases a strain of creeping bent turf as the Metropolitan strain, because the characteristics of that particular grass seem desir-

able for its course, it is important that the strain be as represented; but if an unknown and untested strain be planted, the club of necessity shoulders the full responsibility. Much disappointment and waste of funds has resulted from the indiscriminate planting of unknown strains of creeping bent on golf courses.

To enable clubs to determine the strain of creeping bent used on their courses the Green Section is prepared to identify the most common strains at present available commercially. Just as varieties of apples or strawberries vary somewhat in appearance when grown on different soils in different climates, so creeping bent strains vary slightly in certain characteristics when grown under different conditions. The general habit of growth of the strains remains much the same under varying conditions, but due to the many minor differences that may appear positive identification is not made by the Green Section until the strain under question is compared with known stock under identical conditions at the Arlington turf garden. To accomplish this direct comparison, plantings are made on land which has been in cultivation for some time and kept free from creeping bent. A sample to be identified is planted beside a similar-sized sample from the known stock growing at Arlington. The known sample and the sample to be identified are grown side by side for several months and comparisons are made and recorded from time to time. In this manner the stolons of all samples are grown in the same soil under identical conditions, which enables anyone who is thoroughly familiar with these strains to readily distinguish between them without making any allowances for differences due to varying soil and climatic conditions. This method, of necessity, requires much time for growth, since no attempt is made to identify a sample until it is thoroughly established in the soil at the Arlington turf garden. It is possible to make fairly reliable identification of strains growing on courses, but it has been the experience of those acquainted with the work that such identifications are not always dependable and that positive identification requires some such procedure as that now used at the Arlington turf garden. Even with the method of comparing strains as here outlined, the Green Section does not attempt to positively identify every strain that is received, since some of the commercial strains appear similar unless a more elaborate series of comparisons is made. Thus the strain commonly known as Columbia is difficult to distinguish from several similar strains that have been distributed commercially in recent years. All of these strains give a somewhat similar type of turf, which has generally been regarded as unsatisfactory. All of these strains are merely identified as of the Columbia type. To distinguish between some of the closely related strains of the Columbia type would necessitate plantings to establish closely cut turf for a comparison of disease resistance and other qualities in which these strains are known to vary. Such comparisons would be far too costly to be justified except in rare cases, and then only at the expense of the club or individual desiring the exact name. This necessity for comparing certain stages of plant growth for the identification of strains or varieties is not by any means new to those acquainted with plant culture. When a man buys young apple trees, for instance, he may have to wait from 5 to 10 years until fruit is borne before the variety can be positively identified. Certain types of apple varieties can be recognized from leaves and bark, but the final identification

of particular varieties must await comparison of fruits; and likewise positive identification of some creeping bent strains must await certain stages of development in the turf. The buyer of apple nursery stock must depend on reliable nurserymen to assure getting the variety he orders, and golf clubs must do likewise in obtaining creeping bent stolons unless they raise their own stolons and are careful to do it on land which is free from other strains.

In some cases the same strain of creeping bent has been distributed from different nurseries under different names. If a nurseryman chooses to rename a strain, he is at liberty to do so. The Green Section in its identification of a strain of creeping bent uses the name that was applied to that particular strain when it was first listed in the records of the Arlington turf garden.

QUESTIONS AND ANSWERS

Selecting strains of Bermuda grass.—We are considering the substitution of grass greens for our sand greens and are wondering whether it would be practicable for this purpose to make use of a local strain of Bermuda grass. In an experimental way we have just put into play a green which we have sodded with a local strain. (Mexico)

ANSWER.—There are numerous strains of Bermuda grass, but since there has been little experimental work done so far on individual strains the different strains are not named, except in a general way. In Atlanta, Ga., fine strains were selected and were all called the Atlanta strain. This name indicates no strain in particular, but is generally considered to refer to any fine strain. Giant Bermuda grass, on the other hand, is spoken of when referring to one of the coarser strains. The St. Lucie strain of Bermuda grass is found in Florida and is slightly different from other strains in that it produces no underground rootstocks but spreads entirely by stolons aboveground. Pure seed of the St. Lucie strain is not available. From Bermuda seed on the market many different strains of Bermuda grass may be produced. Golf courses in the South should maintain nurseries of Bermuda grass grown from seed, and when particularly fine strains appear, or strains suitable for particular purposes, they should be isolated and planted in separate nurseries. Cuttings from these could then be used for planting putting greens or for other purposes. Certain strains of creeping bent were originally developed in this manner. If particularly fine patches of Bermuda grass are developed on your putting green from one source or another, it would be well to dig up the sod and plant nurseries from them in the manner recommended for planting creeping bent nurseries as described in various numbers of the Bulletin. Such a nursery would, in time, furnish material from which to plant all putting greens with a uniform strain of fine Bermuda grass.

Mixing arsenate of lead with sulphate of ammonia.—In the control of earthworms and grubs can arsenate of lead be applied mixed with sulphate of ammonia in order to let a single application serve for both fertilizing and applying the insecticide? (Ohio)

ANSWER.—The mixing and applying of these two chemicals together will not destroy the efficiency of either.