

grew so slowly that it seemed advisable to leave them uncut throughout the course of the experiment. As with velvet bent, there was very little proliferation, the stems were weak, internodes long, and the leaves light green in color. Table 4 gives the quantitative results. It may be observed that shading had a more restricting effect on root than on top growth. The green weight of roots of the plants kept in full sunlight was 8 times greater than that of the partially shaded plants. Under the experimental conditions employed, there was no benefit in any way resulting from the shading of the Metropolitan bent. Possibly some benefits might have been observed had somewhat more light been provided to the partially shaded cultures.

TABLE 4.—EFFECT OF SHADE ON METROPOLITAN CREEPING BENT.
WEIGHT (IN GRAMS) OF CLIPPINGS, TOPS, AND ROOTS PRODUCED
UNDER FULL SUNLIGHT AND PARTIAL SHADE.

	<i>Full sunlight</i>	<i>Partial shade</i>
Weight of clippings removed at end of experiment.....	24.7	Left uncut 19.3
Weight of tops at end of experiment.....	40.2	19.3
<i>Total weight of clippings and tops.....</i>	64.9	19.3
Weight of roots at end of experiment.....	19.4	2.3
<i>Ratio of weight of tops to roots.....</i>	3.3	8.3

The results of these experiments as shown in the tables and photograph give definite evidence that shade, if not too intense, may have a beneficial effect upon top growth of velvet bent in a soil of low fertility, but that root growth may be dangerously restricted, the reduction being approximately in proportion to the degree of exclusion of light. No beneficial results of shading Metropolitan creeping bent were observed under the conditions of shading employed. It is possible, however, that somewhat different results would be obtained if the plants were under less shaded conditions.

Violet rays an aid in seed identification.—Although it makes little difference to southern golf clubs whether they use perennial (English) ryegrass or Italian ryegrass as a winter turf on their dormant Bermuda greens, the seed analyst is often called upon to identify these two kinds of seed. Sometimes seeds of these two grasses are indistinguishable by ordinary means. It has been discovered that violet rays would produce a glow on white filter paper on which the roots of certain plants are growing. With ryegrass seeds it is found that these rays when falling upon paper on which Italian ryegrass seeds are germinating will produce this glow, but not so with perennial ryegrass seeds. The reason for this peculiar behavior of the two varieties of seed is an entire mystery, but the test is admirably adapted for identification of the two varieties. The first experiments were conducted with a special violet-ray lamp, but later experiments revealed that an ordinary lamp would answer the purpose if a special light filter is used to shut out the visible rays.

Chemical fertilizers may be mixed with compost at any time that is convenient provided the compost is kept under cover. These fertilizers do not lose their strength under such conditions.