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We have received a generous response to our last issue, in which we tried to point out some of the many sources of information which the greenkeeper has at his disposal. It would be impossible to point out all the sources if we used every issue for a year, but we will use part of this issue to add a few suggestions to those in our last issue.

The duties of a greenkeeper are so varied that he can and must secure knowledge of many sorts to aid him in his work. A large amount of knowledge printed more especially for the farmer, or the scientist, or for some other field, will be of interest to him. In this manner, nearly everything which deals with the soil in its complex whole will interest him. A few bulletins which may interest in part are:
"Nitrate Assimilation in Soils", Iowa State Research Bulletin No. 135.
"The Color of Soils in Relation to Organic Matter Content", Iowa State Research Bulletin No. 75.
"Some Relations of Green Manures to the Nitrogen of a Soil", Cornell Univ. Memoir 115.
"Grades of Peat and Muck for Soil Improvement", U. S. D. A. Circular No. 290.
"Unproductive Black Soils", Purdue Univ. Bulletin No. 157.

Of late years many clubs have planted the areas outside the course with plantations of evergreens, or in some cases hardwoods. There are many bulletins which will help the grower of such plantations. Many bulletins of disease and insect pests have been issued and are ready to help. A few such bulletins are:
"The Dutch Elm Disease", Cornell Extension Bulletin 290.
"Twenty Years Growth of a Sprout Hardwood Forest in New York", Cornell Bulletin 465.
"Care of New Tree Plantings", Iowa State Extension Bulletin No. 127.
"Care and Improvement of the Farm Woods", U. S. D. A. Farmers' Bulletin No. 1177.
"Tree Surgery", Farmers' Bulletin No. 1178.
"Pruning", Farmers' Bulletin No. 181.
If interested in a perennial garden, read the fine bulletin "Herbaceous Perennials", issued by the U. S. D. A. as Farmers' Bulletin No. 1381, and among many others a fine study of the Phlox in Bulletin 538 from the Cornell Univ. Agri. Exp. Station, "History, Culture, and Varieties of SummerFlowering Phloxes".

ETC. ETC. ETC.

## HARTFORD PARK DEPARTMENT'S NURSERY OF 14276 VELVET BENT

In Goodwin Park, eighteen new greens are being constructed by the Hartford Park Department. Velvet bent was selected to plant on these greens, because it is without doubt the best turf grass for putting greens. There is a decided trend among green chairmen and greenkeepers to change their greens over to some strain of velvet bent, and the opportunity to plant eighteen new greens with this fine grass was too good to be overlooked. The 14276 strain was chosen because it has: (1), a high degree of resistance to turf diseases, especially Brown-patch and Dollar spot, (2) a beautiful dark green color, (3) a fine texture and a stiff upright growth, (4) the highest rating at the U. S. G. A. Turf Gardens, Charles River Country Club, and at the Rhode Island Experiment Station, Kingston, R. I. Fortunately, Mr. George Hollister, Superintendent of Parks, was able to purchase from Frank Robinson, a member of our club and a man who loves to work with turf grasses, 3000 feet of the 14276 to start a nursery of $21 / 4$ acres.

The nursery is located in the South Meadows near the Connecticut River, on a heavy silt loam soil. The land was plowed, harrowed, and smoothed with a plank drag in July of this year, and we started to plant the turf on August 2nd. F. E. R. A. labor was used to do this work. Rows were made nine inches apart and about one and a half inches deep. To mark the rows, a large homemade "rake" was used. It took six men
to operate this "rake", which marked eight rows at a time. The turf, which had been cut one inch thick, one foot wide, and five feet long, was chopped with meat cleavers into pieces two inches square. Several experienced "butchers" from the ranks of the F. E. R. A. were brought to light during this operation. The pieces were then planted about nine inches apart in the rows and watered immediately. This involved a great deal of hand work, approximately 840 man hours, which was furnished for the most part by the F. E. R. A. From then on it was a case of watering, weeding and fertilizing.

Water is essential. It so happened that an extended dry spell, which lasted for three weeks, kept the men busy watering to keep the small pieces of turf from drying out. An additional line was installed to increase the amount of water, but even so, some of the turf got pretty brown. However, practically all of it came back when we got some rain and a little cool weather to help out. About the only ill effect of this drought was to set the turf back a couple of weeks. In applying water we tried to get the ground well moistened to start with, after which it was a case of going over the entire area as frequently as possible to keep the pieces of turf fresh and green, much as one would do in watering a green just planted with stolons. In our case it was just impossible to get too much water on. After the first rain the complextion of the nursery changed over night as if by magic, which goes to show that no amount of artificial watering can compensate for a good natural rain.

Weeding is very important and is responsible for the biggest labor item after the original planting is done. The most troublesome weed was creeping bent. This grass takes hold and spreads so rapidly that it will over-run the nursery in no time. Other weeds found were Colonial bent, blue grass, quack grass, and some clover. There were several annual weeds, but these were not difficult to take out. We started to cultivate between the rows to keep the weeds down, but found that the men were not careful enough and the loosened soil, being crusty, would get onto the small pieces of 14276 , which would kill out whenever it was covered. Cultivation was stopped and the men pulled all the weeds by hand for the first six weeks, after which the 14276 had made enough growth and was not so easily covered by the loose soil when
cultivation was resumed. This cultivation was shallow, just enough to chop the weeds, and was done with small garden hoes. It was still necessary to do considerable hand weeding close to the small pieces of turf. One man did all of this work and he had to be careful to get every piece of creeping bent possible. I believe that the 14276 velvet bent, when planted on the greens, will crowd out all other turf grasses, except other strains of velvet, and this includes creeping bent. Yet, if too much creeping bent is allowed to grow in the nursery with the 14276 , it will be chopped up with it and planted on the greens. Here it will make a more rapid growth than the 14276 and a spotty growth will be evident for a few years. We want to give the 14276 as little competition as possible so that a uniform stand can be obtained quickly.

A ton of 7-9-2 fertilizer has been applied so far. The first application was made one month after the turf had been planted. Only 500 pounds were put on at one time, and the applications were from ten days to two weeks apart, depending upon weather conditions. The spreading was done by hand, and except for the first time, was done in the rain, which eliminated the necessity of watering.

No disease of any kind has been noticed so far and no fungicides or insectcides have been applied.

We have taken photographs of the nursery every month since it was planted. These show the stages of growth at set intervals, and are very interesting. At the end of two months the pieces of turf had increased about twice their original size, and after three months had tripled in size. No stolons or rooting nodes were noticeable except those on the under side, which were short and close to the parent plants, until the end of the second month. From then on, however, numerous short stolons were evident, originating from all sides and from the tops of the tussocks also, for we allowed the turf to develop naturally without cutting. On the 14276 these stolons do not grow as rapidly nor as profusely as they do on creeping bent. This fact, which makes it necessary to allow more time for development in the nursery, is one of the desirable features of this turf for putting greens as compared to creeping bent, for it seems that this characteristic should eliminate some of the raking on the greens, which is so
essential with creeping bent.
After the nursery was established, two experiments were tried on a small scale with some of the 14276 . We wondered what results could be obtained if, instead of chopping the sod into pieces two inches square, we divided it into smaller units. Some of the two inch pieces were therefore broken up into individual plants. These were planted in rows as had been done with the larger pieces and they received the same treatment. It was very noticeable that the individual plants spread more rapidly and sent out stolons much sooner than did the larger pieces. If we were to plant more of the 14276 and could do the planting in cool weather with plenty of water available, we would undoubtedly use this later method.

On another plot we separated the clumps into individual plants and treated them like stolons; i. e., they were broadcast over the surface, topdressed, and kept moist. In three days four or five long healthy new roots had been formed by each plant, and in four weeks each individual stolon, when pulled up, held by the new roots formed, a ball of soil larger than a golf ball. There is no question as to this 14276
being a vigorous and profuse rooter. It was necessary to topdress the stolons a little heavier than would ordinarily be the case when planting stolons of creeping bent, on account of the enlarged stems at the base of the individual plants of 14276 . As was the case with the separate plants set out in rows, the stolons grew very rapidly, and sent out jointed runners much sooner than the two inch pieces.

There is an enormous amount of labor necessary in the propagation of the 14276 velvet bent, and the two largest items are planting and weeding. Watering and fertilizing are important and must be done carefully if good results are expected. However, we believe that a nursery of this kind is well worth while in the Park Department, for an unlimited supply of this beautiful strain of velvet bent will always be available. In the Spring, we will have at least eight greens ready for planting. The remaining ten greens will all be planted during the coming season, and it will be a great day for us here in Hartford when eighteen greens of 14276 are opened for play.

Everett J. Pyle.


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## A GRASS OF POSSIBLE VALUE FOR

DRY OR SANDY FAIRWAYS

Dr. V. T. Stoutemyer<br>Iowa State College

During a visit to the O'Neill Country Club of O'Neill, Nebraska in the fall of 1935, Mr. Jess Fults, agrostologist of the Federal Soil Conservation Service, called the attention of the writer to a fine-textured native annual grass, Sporobolus neglectus, on the course. This country club is located in the tall grass prairie region, and bluegrass and other standard fairway turf grasses did not thrive on the dry sandy hills which cover the course. This difficult problem for this golf club was finally solved by the natural seeding of one of the native annual dropseed grasses, Sporobolus neglectus, over the area. At the date of observation several fairways consisted of practically pure stands of this grass. Only a few scattered patches of Buffalo grass could be seen.

The playing qualities of this turf have proven most gratifying to the members of this club. The turf is of very fine texture, dense, and not bunchy. When cut rather high it gives the excellent "brassie lies" which are so desirable.

Sporobolus neglectus is an annual, but this would not necessarily prove to be a difficulty if a cultural system were followed which would allow reseeding. In some sections of the country, the fairways, and often the greens as well, on the courses consist largely of Poa annua, which reseeds itself each year. This grass is found growing in sandy or dry ground.

According to A. S. Hitchcock it is distributed from Quebec and Maine to North Dakota, south to Maryland, Tennessee and Texas; also Washington and Arizona.

There are also a number of very closely related species of Sporobolus, both annual and perennial, which deserve some trial by those engaged in turf research. Most of the grasses of this group are adapted to dry or poor soils and some of these may have value for sports turf under difficult situations.

Hovey \& Company, well known seed and golf supply house, formerly of 150 Milk Street, are now located in new quarters at 130 Broad Street, Boston, Mass.

## ADVERTISERS—ATTENTION!

All copy for the Christmas issue must be in by December 10th, in order that this issue can be in the mail and delivered before Christmas.

## THE FROLIC

The November meeting was held as Ladies' Nite, in the form of a Frolic, at the Sudbury Town Hall, Sudbury, Mass. A very fine turkey dinner and an evening of fun, games, and dancing under the direction of the Entertainment Committee gave all present an enjoyable time. Some ninety members and friends attended.

## CORRECTION

We are sorry to announce that we slipped in our proof reading last month and did not notice the omission of an "ing" from the "bring" in the second sentence of the second paragraph of the Thomas W. Emerson advertisement. This sentence should have read, "Greenkeepers by bringing this suggestion to the attention of their committee chairman will be rendering their club a real service."

Pres. West has announced the Nominating Committee, to prepare a slate of officers for 1936, to consist of Paul Wanberg, Paul Hayden, and Joseph Oldfield.

Rubber-tired tractors are no novelty now, but rather the accepted thing. Wheelbarrows are now equipped with balloons, and fairway mowers are being tried with rubber tires. What next? Keep in line with such new improvements; you may not have the opportunity to try them, but keep in touch with those who do, and if they prove successful, you will know it, and can act accordingly.

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