Care of Bent Grass Greens

By O. J. NOER

Continuation of an article which began in the February issue.

Turf on the greens of the first golf courses built in America was produced from seed. A mixture of fescue and South German mixed bent was used. Seeding rates were very heavy, in the neighborhood of 10 pounds per 1000 sq. ft. of a mixture made up of equal parts of each grass. Creeping red fescue of European origin was preferred but when seed of it became scarce seed from New Zealand commonly called Chewings fescue was substituted.

A man by the name of Chewings is said to have been the first New Zealander to produce seed in commercial quantities in 1835. Presumably he marked the bags of seed as "Chewings fescue." The seed often lost vitality after leaving New Zealand, the germination falling occasionally to 10 or 15% within 6 to 8 months after reaching America. Growers have overcome this handicap by careful curing of the seed and making shipment by refrigeration. Fescue does not withstand competition of the bent grasses, especially when the latter are fertilized generously with nitrogen and watered regularly. The use of fescue in greens started to wane during and after the last war and was discontinued altogether by 1939. Seth Raynor and his successor Charles Banks were the last to abandon fescue. There was not a trace of fescue in the turf on the last courses built by them within 2 years after the greens were seeded with it.

South German mixed bent seed continued to be used for greens until World War I. When imports were stopped by the war in Europe, Rhode Island bent seed was used, and the vegetative method of planting creeping bent was developed under the sponsorship of Drs. Piper and Oakley of the Green Section. When the war ended mixed German bent never regained its popularity. Some seed was imported until the new bent seed industry of Oregon and Washington succeeded, with the help of Rhode Island producers, in having a high duty placed on imported seed of foreign origin.

Bent Green 50 Years Old

There are many good greens of mixed German bent turf, especially on the older courses in the Eastern part of the United States. Some of the best known golf clubs in this country have greens of mixed German bent turf which are 25 to 50 years old.

South German bent is a mixture of 3 principal types of bent grass as the name implies. Agrostis is the name used to designate the bent family of grasses. Agrostis tenuis Sibth, sometimes called Agrostis Vulgaris With., is the colonial type of bent, Agrostis Stolonifera is the creeping type, and Agrostis Canina is velvet bent. South German mixed bent is a mixture of these three with colonial predominating. The amount of velvet bent varies from 10 to 30%. The strains of creeping bent are very different and along with the velvets give the spotted appearance to the turf. The patches of the creepers and velvet stand out in contrast to the uniform-looking colonial bent which forms the background. The various named and numbered strains of creeping bent used for vegetative planting are selections taken from mixed German bent greens. The named strains of velvet bent originated in a similar manner.

The commercial seed sold as South German mixed bent comes from Central and Southwest Germany, where it grows wild. The seed is harvested by hand and is harvested by residents of villages located near the seed producing areas. The seed is variable in composition, has a fairly high

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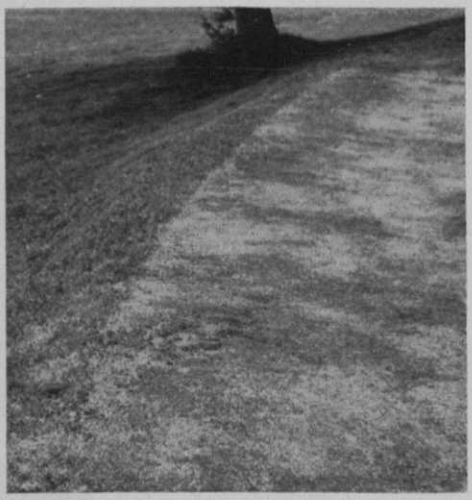

Abrupt banking around edges of green sheds water and dries the soil in the green

have to devote more attention to performing miracles on the men who are club officials and members.

They are an exacting lot. They don't realize what you are up against in the problem of forcing the growth of a frequently harvested crop and trying to keep it healthy. You and they have the gap between you that the city fellow and the farmer have.

But these city fellows lately have begun to acquire a considerable, though sometimes reluctant respect for the man who is closely associated with manual labor. The unions have forced that, often by methods that have not been universally endorsed or entirely in public service. Nevertheless unions compelled action on wages, hours and job security. Eventually the new basis will be as much to the benefit of management and stockholders as to the union and non-union workers or there will be equalizing adjustments made.

It is bound to occur to club officials that greenkeepers have not received wage increases paralleling those of unionized trades. It must also get around that when a good club wants to replace a greenkeeper who is retiring or going into another field it has to hire a superintendent away from another club. Competent new men are not coming into the field any way nearly fast enough to supply the growing needs of golf. The average age of Greenkeeping Superintendents' association members is over 45. The school and on-the-job training of course superintendents under the GI Bill of Rights has not drawn young men into the study of course maintenance as specialists. The young fellows want progreenkeeper jobs where they have a better chance of making money.

The first class course superintendent today is a rare combination of artist, scientist, farmer, mechanic and businessman. The businessman phase of his capacities must be emphasized in the future.

There are signs of the road opening for his recognition as a high-powered authority. I noticed the Jeep ad in Colliers headed "The greenkeepers best friend is the universal Jeep." That is a definite step in the right direction. Pros, bartenders, society queens and men of distinction have their fame and fortune added to by these testimonial ads which in many cases are testimony as phony as a $7 bill. But the greenkeeper's testimonial means something. His standing with the public is based on integrity and performance. He would be the laughing-stock of his colleagues were he to lend or lease his name to the endorsement of something he wasn't absolutely sure from ample experience, warranted his approval. His influence already has been a dominant element in accounting for public acceptance of some fertilizers, mowing and watering equipment and weed-killers.

He has established a fine foundation for future status as an executive and authority. The program of this meeting, the programs of the short courses and the greenkeeper district association meetings show how far he has come as a qualified authority. Much of the technical material in these papers is too technical for the chairmen and board members. Practically all of it will mean more financially to your clubs than it will mean to you.

What has got to be ahead for the course superintendent is more of an equalization between the clubs and superintendents of the financial benefits of progress in golf course maintenance. Either that, or there will be a shortage of personnel required for continuing the advance greenkeeping has made since it started to modernize itself when the Green Section was formed in 1921.

BENT GRASS GREENS

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amount of impurities and low germination. A purity figure of 80 percent, and germination of 85 percent is not uncommon. Chaff is the principal impurity but weeds are present, including mouse-ear chickweed, yarrow, and sheep sorrel.

The colonial bents have gained in favor during recent years but have been used on fairways more than on greens. Agrostis tenuis includes Astoria and Highland strains grown in Oregon and Washington; Rhode Island bent, produced in New England; Prince Edward Island bent in Canada, and the Brown-top of New Zealand.

The colonial bent grasses have a more erect habit of growth than the creeping bents because they spread principally by underground stems rather than surface creeping runners. Agrostis tenuis seems to be able to survive in drier soil than creeping bent. It is found growing wild on soils of higher elevation, while the creeping bents grow in areas which are subject to overflow. The Highland type receives its name from the fact that it grows at even higher elevations in Oregon than Astoria, and is said to withstand drier soil than the other types of bent. There is a so-called Dryland strain of colonial bent in New Zealand which is said to have similar characteristics to Highland.

The colonial bents are more susceptible to dollar spot than the seaside type of creeping bent. They are more immune to snow mold and brown patch than is seaside.

Some creeping bent (Agrostis stoloni-

fera var. Compacta Hartm) is produced in the New Brunswick province of Canada, but the chief source is in Oregon and Washington. The fields are along the ocean and along the streams that flow into the Pacific ocean and are subject to overflow by high tides. The seed is sold commercially as seaside bent. "Cocoos," Triple A brand, and other trade marked names are used by some firms to distinguish their seed.

All seeds produced in Oregon and Washington are certified as to purity and germination by the Seed Testing Laboratory of the state of origin. The first 2 grades are designated by a blue and red tag respectively. Blue tag quality is the one to use on greens.

The seeding rate customarily used for colonial and seaside bent does not exceed 3 pounds per 1000 square feet. This rate is ample to give a good coverage of grass provided the grass is seeded into a firm but mellow seed bed, and that the seed is not imbedded too deep.

3 Strains of Velvet

There are three commercial strains of velvet bent; one was selected by the Green Section and was named Piper velvet in honor of Dr. Piper. Dr. De France and his co-workers at Rhode Island have done more experimental work with it, and with other velvet bents, than anybody else in this country, or elsewhere. They have isolated superior strains, have succeeded in harvesting some seed, and have induced local farmers to produce seed. Kernwood is a velvet bent selection made by Mitchell at the Kernwood club in Salem, Mass. Sod of it is produced in New Hampshire and has been used to sod a number of golf greens in the New England and New York area. Raritan is a selection of velvet made by Dr. Howard Sprague when he was at the New Jersey station. It is said to be a good seed producer and makes an excellent turf. Some seed was produced commercially before the war and it has been said

that production will be resumed again.

Velvet bent is the last word in fine turf. No other grass can compare with it in that respect. The texture resembles a top quality Persian rug. There are some excellent greens of velvet bent in Cape Cod, especially at Hyannisport, which is a seaside course. The summer temperatures are mild, and the dew is heavy. The principal drawback to velvet bent is the fact that it has poor recuperative powers to stage a come-back after it is damaged by scald or from any other cause. It becomes matted with age and starts to develop a sickly yellow chlorotic color during cool wet spells. In extreme cases the turf dies and then clover gets bad. The use of pure velvet bent grass, especially outside of the coastal area of New England, is a hazardous undertaking until more is known about its care, especially with respect to mat formation and chlorosis.

Velvet in Mixture

One of the big possibilities for the use of velvet bent seed is to produce a synthetic seed mixture for those who prefer mixed bent greens. A mixture similar to the one imported from Germany can be made by using a mixture of velvet bent, seaside, and colonial bent either as Astoria, Brown top or Rhode Island. Not more than 10 to 15 percent each of velvet and seaside bent should be needed and the balance of 70 to 75 percent should be colonial.

Good stands of pure Raritan velvet have been obtained with a seeding rate not in excess of 1 pound per 1000 square feet. That in part offsets its high cost per pound.

Some greens of mixed German bent have a higher percentage of velvet bent in them than others. The reason is probably in the topdressing and fertilization. Velvet bent needs less nitrogen than creeping or colonial bent and is very sensitive to topdressing. Lower rates of nitrogen and light topdressing (never over ½ yard to 5000 square feet) tend to favor the velvet at the expense of the other grasses and the reverse makes the creeping bents develop at the expense of the velvet bent.

Washington and Metropolitan strains were the best of the original creeping bents developed for vegetative planting. Metropolitan did not live up to original expectations. Wm. Keating at Des Moines still has very fine greens of this grass but it has not found general favor. There are many fine greens of Washington bent. They are most numerous in the Middle West. Washington bent makes a very tight turf, and withstands play when greens are wet better than the seeded bents now available. It is more immune to brownpatch than Metropolitan but is susceptible to dollarspot

which is its worst enemy. The dollarspot can be prevented by proper management and the regular use of preventative treatments with fungicide. Washington is slow to green up in the spring, and goes off color with the first frost in the fall. Everything considered its performance has been good over a span of 25 years.

Some of the newer selections of creeping bent are very promising. They are among the numbered strains which were tested on the pie or experimental greens located at strategic spots around the country. The best ones include C1, C15, C17 and C29. The commercial strain known as Old Orchard received a high rating. The C1 which is now called Arlington made its best showing in the region from Kansas City across through St. Louis, Louisville, Cincinnati, etc., because of its ability to withstand the hot and humid summer weather. It is not palatable to cut worms, chinch bugs, etc., and is not subject to serious injury by them. C15 rated high partly because of its ability to start growth early in the spring and to stay green in the fall long after other grasses have turned brown. This may be an advantage in some places.

The most promising development with vegetative plantings is the use of mixtures. The grasses selected must be of similar color and growth habit so they will blend together. The strains C1, C19 and C27 have performed well in mixtures. The combination of all 3, and a mixture of C1 and C19, have made excellent turf on the greens at Fairfax in Virginia. The course is owned by John Conley and the Supt. in charge is Wm. Glover. These mixtures were used on 2 greens when the first 9 was built before the war. The combination of all 3 was selected for the second nine when the greens were constructed in 1946. The grasses are grown separately in rows in the nursery and are mixed as the stolons are shredded for planting. The mixture contains an equal amount, or one-third of each strain.

Shredded Stolons Quicker Producers

For vegetative planting, shredded stolons produced turf quicker than cut ones in a trial at Washington, and 1 yard of topdressing to 5000 sq. ft. of green was the right amount to use. The usual planting ratio is 1 to 10, although 1 to 6 or 7 gives quicker coverage. These ratios signify that the stolons from one square foot of nursery are used to cover 10, or 6 to 7, sq. ft. of planting area.

There are many good bent grasses. Some of them are mixed German greens, others are seaside, a few are colonial, and the balance are the vegetative strains. The seaside greens of West Texas, California and the Pacific Coast region always seem better than the same grass elsewhere. The days there are hot, but the humidity is low and rain is negligible. The nights are cooler because of the altitude. But where the rainfall and humidity are high seaside does not always do as well as the better vegetative strains. The colonial types have not been used as much, but there are good greens of it, especially in the New England area, and in the eastern provinces of Canada.

Club officials sometimes think a local bent found on the course, or nearby, should be used. They believe it is better suited to local soil and climate. The local grass may behave differently when placed under close mowing, and develop undesirable features. The experimental test greens established by the Green Section to compare the different grasses were scattered over the entire United States. The best grasses rated near the top everywhere, and the poor ones stayed at the bottom. The thing to do is to make the choice from the types of bent grass mentioned above, and select one which has given a good account of itself in the locality where it is to be seeded or planted.