Turfgrass Portraits III:

Bentgrasses

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This is the third in a series of nine articles on basic traits and maintenance procedures for common turfgrasses. Next month author Schery discusses "Wintergrass".

BENTGRASSES have long been the elite northern turf species, except for one "black sheep" of the family, redtop, a frequent nursegrass. Distinctions between bentgrasses are not clear cut, and varieties reflect local adaptation as much as anything. An outstanding example is Highland bentgrass, which has made a hilly section of the Cascade foothills in Oregon its own. The just-average rainfall of this area, with hot, dry summers, is hardly typical "bentgrass country." In contrast Astoria and Seaside varieties come mostly from lower lying bottoms nearer the coast, where rainfall may be double that of the Highland area.

Both Highland and Astoria are grouped as Colonial bents *(Agrostis tenuis)*, along with "Colonial bent" from Washington. Holfior, a Dutch selection, seems similar, though classified *Agrostis stolonifera*. Seaside, and more recently the hybrid, Penncross, are considered creeping bentgrasses, *Agrostis palustris*. The exquisitely fine-textured Velvet bent *(Agrostis canina)* is experiencing some revival of interest. All are available as seed. Seed of any sexual species carries a degree of genetic reassortment. A seeded population includes very slightly varying types, and profits from hybrid vigor. There is also the substantial convenience of easy planting.

Many golf greens have been planted to bent strains perpetuated vegetatively and thus held reasonably uniform (assuming no mutations or volunteer grass in the nursery). Such strains have been mostly local adaptations, noticed doing well under usage. They are primarily for specialized golf turf, under a regimen of care too tedious and expensive for homeowner, industrial, or general public usage.

Only the most fragmentary records exist of early bentgrass introductions, and what intermixture has occurred with native species. Mixed lots of "German bent" were early brought to Oregon, and spread widely west of the Cascades. Natural selection supplied successful types, which the agriculturists later chose for varietal designation. Today Oregon supplies most of the domestic fine-textured bentgrass seed, a large portion of which is exported back to Europe (from which it presumably originated). The exception is coarse redtop *(Agrostis alba)*, of which most seed has a midwestern origin.

Growth Pattern and Preferences

With breeds of bentgrass so diverse, it's hardly possible to characterize growth pattern exactly. All bentgrasses are "cool-weather" species, growing exuberantly in spring and autumn (temperatures ranging downward from 80°). They don't hold their color into winter quite so well as do Kentucky bluegrasses and fine fescues, but nonetheless retain a greenish cast, especially where protected by a snow blanket.

To a greater or lesser extent, bentgrasses spread by aboveground runners (stolons) that root at the joints. This is especially the tendency with creeping bents. Tillers are abundant, contributing to the superbly tight texture that makes bentgrasses so sought for bowling and putting greens. But this dense growth weaves a thatch of intercrossing stems, demanding precautionary thinning (dethatching) occasionally. Bentgrasses are thus not so self-sufficient and easy to keep as are most Kentucky bluegrasses and fine fescues. Some varieties are handled more easily than others. The creeping bentgrasses require most care. More erect forms, such as Highland, mat less, usually prove more suitable for lawns and fairways.

Any bentgrass deserves mowing at least twice per week, to encourage tillering from below. Otherwise a tuft of leaves forms at the tip of the stem, leaving brown stubble when removed by mowing.

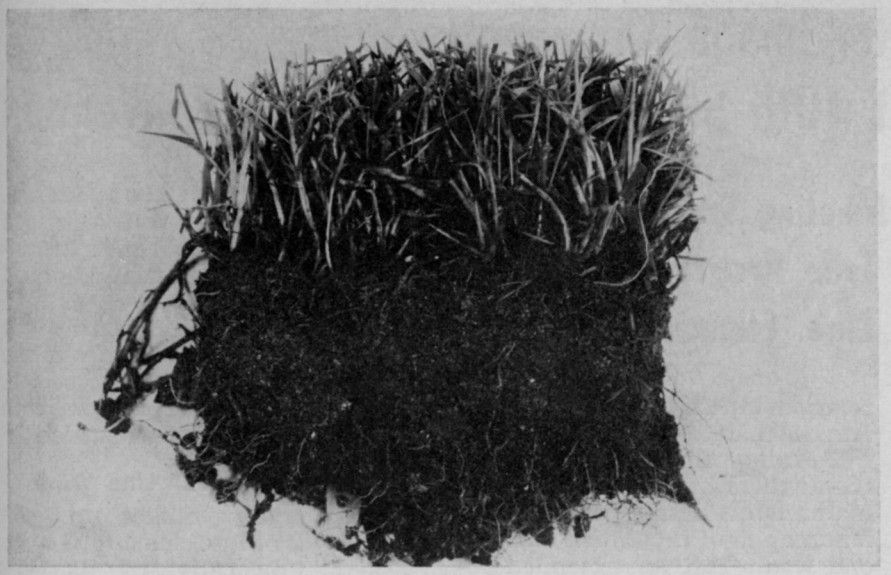
By and large, bentgrasses love the "full rich life." They do their best in misty climates, or where they are watered regularly. They relish fertilization, possibly partly because a rainy environment leaches plant food. Another consequence of abundant moisture is acid soil, of which bentgrass is quite tolerant.

Adaptation

Bentgrass is preeminent on the Pacific coast from San Francisco northward. It does reasonably well in the northern states east of the Great Plains, too, especially around the Great Lakes, and in some of the drizzlier sections of New England.

Most bentgrass varieties are widely adapted, with seeded types such as Highland and Penncross being utilized both East and West, North and (mid) South. The vegetative varieties often perform slightly better according to region. Washington, Arlington, and Congressional have rated near the top in Washington, D. C.; Old Orchard, Toronto, Cohansey and others in the upper Midwest; Evansville and Springfield in the lower Midwest. All bentgrasses perform better in full or nearly full sun, as compared to shade.

In the early days of packaged lawn seed, bentgrass of uncer-



Highland bentgrass, shown here, is one of the more erect of the bentgrasses. This sod is mowed to about a ¾-inch height. Photograph is from The Lawn Institute, which author Schery heads.

tain origin was often included. Some natural selections have found the Great Lakes area so to their liking that volunteer bentgrass has become a pest. Tight patches show up in Cleveland and Detroit lawns planted to bluegrass. Seed or live stems seem to occur in most soils.

Many named varieties of bentgrass are probably not the pest that is this volunteer sort. Lawn Institute trials so far indicate that Highland is not aggressive, does not invade neighboring bluegrass. If anything, it is too meek, letting bluegrass and clover invade it. Winterseeding tests in the South show it to be very mild mannered there. The pendulum may someday swing back to include bentgrass in certain seed mixtures (for turfs that must be mowed low).

Adaptation to low mowing is the main reason for choosing bentgrass. Its special usefulness for golf and bowling greens, usually clipped ¼ inch or lower, is obvious. But many fairways, and some lawns, are being low-clipped. Only under very favorable circumstances will bluegrass and fine fescue stand the ½-inch clipping height demanded for professional golf tournaments these days.

Propagation

Bentgrass seeds are very small and abundant, about 7 million to the pound. Consequently, seeding rates can be quite light, though limited on the low side by inability to spread small quantities of seed evenly. One pound per M suffices with a good seedbed. The seedbed should have been cultivated, generously fertilized, allowed to settle, leveled, and the surface reloosened. A good spreader distributes the seed more evenly than is possible by hand; for hand sowing the seed can be bulked with vermiculite, soil, cornmeal, or any dry materials to allow more leeway in distribution.

With the vegetative varieties, the usual practice is to order fresh stolons (fragmented stems from sod washed free of soil). The stolons are spread several bushels/M, topdressed lightly with soil, and watered regularly until rooted from the joints.

What To Watch Out For

Aside from thatch, one of the biggest headaches with bentgrass is disease. Brown patch and dollar spot are especially troublesome, the former under high fertility, the latter under low. Regular prophylaxis with fungicides should be part of the maintenance program, at least in muggy weather. Be careful of burn with certain mercurials and unproven formulations. Even in winter, snow mold (three or four different fungi) can blemish bentgrass. Preventive fungicidal treatment before snow falls, and during any open period of winter, helps forestall snow mold.

Insect damage is no worse to bent than to other grasses. If attack threatens, insecticides used as recommended should not harm or discolor bentgrass. But luxuriant bentgrass may be sensitive to fertilizer, or to certain herbicides (viz. Zytron, Silvex, certain arsenicals), especially on hot summer days. One would hesitate to apply a soluble fertilizer any stronger than 1 lb.N/M, and it is a good precaution to syringe even this light a rate into the turf during hot weather. There is a tendency with bentgrasses for fertilizer particles to perch atop the tight sod rather than sift through to the soil as would be the case with bluegrass and fescue.

Intensively managed bent, such as on golf greens, may winterkill occasionally. Seldom is this directly due to cold, but more likely a cumulative effect involving desiccation and perhaps subsequent disease. Where snow lies on the ground most of the winter, drying out is generally not serious, though snow mold may be intensified. Watson, of Toro, has been successful in protecting putting greens during winter with plastic covers.

In Summary

Bentgrasses offer the finest textured luxury turf available to more northerly regions. Such high status is not without its drawbacks, however, since bentgrasses must be well tended to live up to their potentialities. Involved are frequent mowing, high fertility, irrigation, and regular pesticide application. Disease prevention is particularly important. And vigorous varieties with creeping tendencies may thatch, which in turn can intensify mowing, thinning, and disease-prevention requirements. In spite of the more onerous maintenance, some of the less troublesome varieties merit further trial for low-cut turfs eastward of the Great Plains. Highland should not be the aggressive problem there that is volunteer bent.