Careful consideration should be given to the use of the summer-growing grasses such as Bermuda and *Zoysia*. These grasses are proving themselves in trouble areas such as Philadelphia, Washington, Cleveland, Chicago and St. Louis. Every effort should be made to study conditions on other golf courses and to take advantage of the research findings at experiment stations. Mimeographed copies of talks at the winter conferences should be reviewed. Plans for long-range improvement should be drawn and presented for approval by the board of directors. In the words of the philosopher: "Let us learn by the mistakes of others because we won't live long enough to make all of them ourselves."

BENTGRASS IN THE SOUTH

By FRED V. GRAU
DIRECTOR, USGA GREEN SECTION

The subject of many discussions among the locker-room quarterbacks these days is: "Will bentgrass ever be successful in the South?"

Many incentives for the arguments come from the recent establishment of bent greens at the Indian Creek Country Club in Miami Beach, Fla. Since they were successful and since few golfers are correctly informed, there is a great deal of puzzlement that the greens are to be reconverted to Bermudagrass and ryegrass. This discussion is in the interests of setting the record straight and to state the policies of the USGA Green Section on this controversial point.

A well-maintained bent green represents the ideal putting surface for most golfers. After enduring rough, slow, bumpy Bermuda greens, any golfer naturally would prefer to putt on well-kept bent greens. Golfers are not agronomists, and adaptation of grasses to climate is the least of their worries. What they want is good golf and good turf.

This logical reasoning led the Brook Hollow Golf Club in Dallas, Tex., to install bent greens, and it still has them. The Colonial Country Club in Fort Worth, Tex., installed bentgreens, and in spite of reverses and troubles, it still has its bent.

Since then, all the new courses in Dallas and Fort Worth have installed bent greens. Many of the old courses have destroyed their Bermuda greens and have converted their greens to bent. The same situation exists in Tulsa and Oklahoma City, Okla. It is true that there have been some difficult times and there have been severe losses during unfavorable weather conditions, but not one club in that area has reverted to Bermuda after it had bent greens.

The Indian Creek Country Club in Miami Beach is an exception. Under the capable supervision of O. S. Baker, veteran greenkeeping superintendent, and with the encouragement of Mr. Molloy, manager, bent greens were established two years ago. It was an uphill job because the soil conditions had to be extensively altered. The watering system required considerable revision, and the common Bermuda had to be destroyed. It was a costly but successful operation. During a visit to the club in April, 1949, the writer pronounced the venture completely successful and stated that, under the supervision of a man who knew bentgrass, it would continue to be successful. The abandonment of the good bent greens at Indian Creek Country Club was on the basis of cost more than anything else.

Regardless of the location of bent greens, such greens will be no better than the ability of the superintendent in charge. Under mild weather conditions mistakes can be made without severe penalty. Under the brutal summer weather which occurs in Texas, Washington,

Seedsmen Inspect Beltsville Turf Gardens

Dr. Fred V. Grau, Director of the USGA Green Section, explains the work at the Beltsville Turf Gardens to a group of seedsmen attending the 66th annual convention of the American Seed Trade Association in Washington, D. C. This is one of several groups from the ASTA which were shown over the plots. The turf on which the group is standing is the Green Section's U-3 Bermudagrass.

D. C., Cleveland, Chicago, Philadelphia and St. Louis, mistakes can be costly. Soil conditions must be as good as they can be made; water management, control of fungus diseases and insects and the fertilization program must be handled expertly, with full knowledge of materials and conditions.

A season like 1949 is one which separates the men from the boys. Even the old, experienced hands are having difficulties this year. It does not mean, however, that they are forsaking bentgrass, because, among all the adapted grasses, bentgrass still provides the superior putting surfaces that golfers demand.

The USGA Green Section does not agitate for bent greens nor does it recommend bentgrass for greens when another grass would be more suitable under existing soil, climatic and management conditions. To grow bent, one must know bent. However, when a golf club says, "We wan bent greens; may we have your best recommendations," there is only one course open to the USGA Green Section and that is to supply the best information available, including the recommendation that a superintendent be secured who knows how to grow bent.

Bentgrass is being grown today in virtually every state in the Union. It is true that attempts to install bent greens in the Atlanta district have resulted in failure, but this is due principally to the fact that is has never been managed properly. Bermudagrass is much easier to grow, but it, too, requires skillful management to produce a putting surface that putts like bent. There are some fairways in Atlanta that have more bent than Bermuda. I have seen some so-called "Bermuda greens" that contained less than 10 per cent Bermuda. The 90 per cent was sedge, watergrass, crabgrass and various assorted weeds.

With the production of new, superior strains of Bermudagrass as the result of co-operative work at Tifton, Ga., and testing work in Florida, it may be possible to produce bentlike putting greens from these improved strains of Bermuda.

These new strains were not in existence four years ago; hence the efforts to grow bentgrass in the South. As the work progresses there may be less emphasis on bentgrass, but the demands for a putting surface that putts like the best bent greens in the North will be just as strong.

The USGA Green Section adheres to the policy of trying to produce uniform

putting conditions regardless of the grass used. The only standards we can use are the putting greens of bentgrass which are as close to perfection as scientific greenkeeping can make them. Those who use Bermudagrass, or any other grass, for their putting greens still are faced with the responsibility of producing a putting surface that putts like bent.

QUESTIONS AND ANSWERS

The answers below are in reply to actual questions received by the USGA Green Section staff in correspondence or at turf conferences and meetings. In some cases the question has been rephrased. Since the authorship of many questions received at meetings is in doubt, references to location are omitted

Alta Fescue

QUESTION—Alta fescue has been the subject of a great deal of controversy at our club. Will you please give us your concept of the use of Alta fescue as a turf grass?

ANSWER—The report of the Turf Committee of the American Society of Agronomy for 1948 (Journal, American Society of Agronomy, Vol. 40, No. 12, December, 1948, p. 1140, republished in the USGA JOURNAL, Winter, 1949) cites Alta fescue and Kentucky 31 fescue as having merit as turf grasses and suggests expanded study on their use.

The USGA Green Section consistently has encouraged widespread test plantings on golf-course tees and fairways, on lawns in mixtures with other adapted permanent species, on airfields, roadsides and athletic fields. Without citing innumerable case histories, it can be said with assurance that these two tall fescues have won a high place on most turf areas over a wide range of climate and soils.

The virtues of the tall fescues as turf grasses are: (1) they are drought tolerant but will also tolerate "wet feet"; (2) they are deep rooted; (3) they are resistant to weed and clover invasion; (4) they are tolerant of insects; (5) they are retentive of good color throughout the year; (6) they are capable of combining with other turf grasses.

Their major disadvantages include: (1) coarse texture (which is less objectionable with age, in mixtures and when closely mowed); (2) susceptibility to certain diseases in the early stages of growth (which so far are not particularly destructive).

Mowing Lawngrasses

QUESTION—Please supply me with complete information on the type of lawngrass that does not need mowing.

ANSWER—To our knowledge the lawngrass that does not need mowing is not in existence or has not yet been discovered. One of the things that makes a good lawn is frequent mowing. There are some grasses that need less frequent mowing than others. One of these is centipedegrass. This grass has been adequately described by Dr. G.W. Burton of Tifton, Ga., in the January, 1949, issue of the Southern Seedsman. Another grass which has possibilities for lawns and which will tolerate less frequent mowing than the ordinary turf grass is Zoysia. Neither of these grasses will produce a satisfactory lawn unless it is mowed at least occasionally. Lawns of dichondra on the Pacific Coast rarely need mowing, but this plant has not found adaptation in the Southeast. We suspect that your question was prompted by advertisements proclaiming "the fact" (erroneously) that centipedegrass does not need mowing.

Construction and Maintenance

QUESTION—Please send me complete information on how to build and maintain a golf course.

ANSWER—A golf-course architect is the proper authority to consult on building a golf course. You can obtain a complete list of the members of the American Society of Golf Course Architects from the Secretary, William B. Langford, 2405 Grace Street, Chicago 18, Ill. Those best qualified to maintain golf courses are the experienced golf-course superintendents. The secretary of the Greenkeeping Superintendents' Association is A. M. Brown, P. O. Box 106, St. Charles, Ill. Our office does not profess to have on its staff either a golf-course architect or a golf-course superintendent, but since we are a nonprofit research and educational organization, we work with both groups. At the present time the USGA is in the process of preparing a book on the subject of turf management for golf courses which will embody principles of architecture and maintenance. Until the book is published early in 1950 we would suggest that you consult architects and superintendents to get the fundamentals of building and maintaining a golf course.