

NEW RESEARCH AND EDUCATION FUND

A new Research and Education Fund of the Green Section has been established by the USGA. Its purposes are to sponsor research on turf and its management and to help educate workers in turf, especially new workers.

The work financed by the Fund will be done primarily by educational institutions and agricultural experiment stations. Expenditures will be made mainly as grants, fellowships and research assistantships.

The USGA is inviting subscriptions to the Fund from any one interested. Each subscriber will determine the amount of his annual subscription, but the following minimum amounts are suggested:

Firms and organizations	100.
Individuals	50.

There is no limit on the amount acceptable.

The entire income to the Fund will be expended for research and education as outlined above. No part will be retained by the USGA for administrative costs. The USGA will contribute money from its own resources to the Fund, as well as the services of staff members.

The Green Section will keep in touch with work in progress and will be alert

to needs for new research. This will be done through the Green Section's National Research Coordinator, Dr. Marvin H. Ferguson, and the several Regional Directors in various parts of the country. This will help to insure efficient use of funds, to minimize duplication of research efforts, and to transmit results promptly to golf courses, through the USGA Regional Directors.

Subscribers to the Research and Education Fund will receive the following benefits:

1. An organized national program of research and education for better turf.
2. One subscription to the USGA JOURNAL AND TURF MANAGEMENT (seven times a year) and to all Turfletters issued by all USGA Regional Offices (each office issues approximately six editions a year.)
3. Assistance from Green Section agronomists on turf and related matters, through correspondence.
4. Right to attend small group meetings conducted by Green Section Regional Directors with golf course superintendents and club officials twice a year.

The Research and Education Fund is separate from the Green Section's Regional Turf Service to USGA members.

TURF FOR THE WEST

By CHARLES G. WILSON

WESTERN DIRECTOR, USGA GREEN SECTION

Since much of our turf selection and breeding work has been done in the East, there is quite a controversy over the merits of various grasses as they apply to western growing conditions. Widespread publicity has encouraged the acceptance of many of the newer turfgrasses outside their zone of adaptation. University of California at Los Angeles is the only western experiment station that has devoted much time and effort towards proving the newer grasses. This should not be construed to mean that there is a hands off attitude on the part of golf clubs. However, it does indicate that what may

be right for one section of the West may be entirely wrong for many other sections in this vast area.

The fact that there is no such thing as a miracle grass is worthy of constant repetition. The turfgrass itself is but one facet of the broad field of turf management which, among other things, includes mowing, fertilizing, watering, disease and insect control. Contrary to popular writings on the subject, we have yet to see a turfgrass that thrives under neglect. All of them require mowing, watering and fertilizing if they are to perform satisfactorily for the game of golf.

We can cite many examples of inferior grasses that do an admirable job under the hands of a good turf manager. Conversely, the best of improved grasses is worthless if not managed properly.

In choosing any turfgrass, or selection of grasses, one fundamental question remains paramount: Will the selection increase the golfer's enjoyment of his game? Secondary considerations are: (1) Is it adapted to the area? (2) What are its management requirements? (3) Is it an improvement over selections commonly used in the area? (4) Where should it be used? Answers to these questions can best be obtained by experimental testing on the individual course, supplemented by basic information from the USGA Green Section. It is hoped that the following information will prove helpful in deciding which turfgrasses are worthy of use in the West.

Kentucky Bluegrass

Throughout most of Colorado, Montana, Wyoming, Idaho, Utah, Nevada, Eastern Oregon and Washington, Northern California Valleys, the Bay Area and higher elevations in the Southwest, common Kentucky bluegrass does well. Its main failure relates to an inability to withstand close cutting, and thus, more and more, we see it relegated to rough areas. For such purposes it is admirably suited and will continue to be used. However, for tees and fairways it leaves much to be desired, and herein lies a strong future for the improved Merion bluegrass.

Much has been written concerning the superiority of Merion over common Kentucky bluegrass. The main points of superiority as compiled over a period of years are as follows:

IMPROVEMENT WHERE BLUEGRASS IS WELL ADAPTED: In almost all reports where Merion has been compared with common bluegrass and other bluegrass strains, Merion is a decided improvement. Unfavorable reports come from areas where bluegrass is not well adapted.

RESISTANT TO LEAFSPOT DISEASE: Do not confuse resistance with immunity. Merion may become slightly infected but



This silver trophy has been presented to the Golf Course Superintendents Association of America by the USGA in appreciation of the great contributions to the best interests of golf made by golf course superintendents. It will be held each year by the winner of the GCSA Golf Championship.

is vastly superior to common bluegrass where leafspot is prevalent. Leafspot is not too great a problem in the West. Other diseases such as dollarspot, brownpatch, rust, etc., can be just as disastrous to Merion as to common bluegrass.

ABILITY TO THRIVE UNDER CLOSE CUTTING: This is the most important consideration for our western golf courses, where close mowing is rightfully demanded by the golfer. Merion, because of its prostrate type of growth, has been successfully maintained at a height of 1/2 inch. Common bluegrass is damaged by cutting closer than 1-inch.

As with all turfgrasses, Merion has certain cultural requirements if it is to perform satisfactorily. Some of these are as follows:

HEAVY FERTILITY REQUIREMENTS: Me-

Merion is not a low-fertility grass. It requires periodic nitrogen feedings and also superphosphate if soils are low in this element. A good dense stand of Merion can assimilate 1 pound of actual nitrogen per 1,000 square feet per month of good growing weather. It further requires a non-acid soil with ample reserves of calcium and magnesium and is not too tolerant of alkaline conditions.

MERION DOES NOT LIKE WET FEET: Overwatering is decidedly detrimental. Merion is more drought tolerant than common bluegrass. It should be watered heavily and infrequently.

The Bentgrasses

Bentgrasses are used throughout the entire West. Along the coast they grow naturally in fairways, and of course they have universal acceptance on putting greens. Without bentgrasses in our cooler regions, golf would revert to the dark ages and become a pasture game. Two types (colonial and creeping) are in common usage. Colonials are used to some extent on greens along the northwest coast, although our personal preference would favor creepers. Colonial bents have their greatest future for fairway use, and as overseedings in bermuda-base greens. Creeping bents have their largest place on putting greens, and in cooler regions on tees as well if they are mowed closely. Your USGA Green Section has sponsored and encouraged improvement work with bentgrasses. This work has developed the following application for the West:

VEGETATIVE CREEPING BENT STRAINS: Every course in the West should give improved vegetative bents preference over the seeded seaside and colonials for putting-green use. There are several improved strains available, and all direct comparison tests with seeded bents have shown the superiority of these vegetated strains. True, they require regular feeding, close frequent mowing and disease and insect treatments as do the seeded bents. However, when managed properly they provide the golfer with the ultimate in playing quality and the superintendent with far less maintenance headaches.

The Arlington and Congressional mixture has outperformed seaside in practical tests at the Utah Copper Golf Course, Magna, Utah, and experimentally at the UCLA Turf Plots. On the old pie greens (several selections established in 1939 at Denver Country Club, Denver, Colo., and the Broadmoor Golf Club, Colorado Springs, Colo., Toronto bent is far superior to any of the seeded bents, with Cohansey running a close second. Cohansey has the further merit in southern sections of being a good hot-weather bent that is highly resistant to brown-patch. Arlington is our most dollarspot-resistant bent; Congressional is favored for snowmold resistance and excellent winter color, and Toronto does the best job of keeping out *Poa annua* in areas where tested.

POLY-CROSS BENT: We mention this because it is the first improved creeping bent that can be seeded. Unfortunately there is no seed available at the present time, and to our knowledge the only experimental plot in existence is at UCLA. This plot has not been established for a sufficient period of time to indicate superiority over Seaside if such superiority exists.

The Zoysiagrasses

Where adapted, the zoysias show promise of being drought tolerant, slow growing, highly resistant to disease and insect damage and require only a nominal amount of fertilizer to keep them in good condition. However, they have been inadequately tested in the West. At present they appear to show no promise in the Northwest, Inland Empire and Rocky Mountain areas. Further, their slowness in becoming established and the already excellent qualities of common bermuda in the southern belt make their widespread usage doubtful. Zoysia seems to have its widest usage on home lawns and other small turf areas and thus will be of only minor importance to golf clubs in the West for many years to come.

Improved Bermudagrasses

We can visualize a great potential for fine bermuda strains, especially as they

apply to putting greens in southwestern and southern California valleys. In these areas, bentgrasses are costly and difficult to maintain, and the common bermuda leaves much to be desired from the standpoint of putting quality. In the South we have both research and practical information to the effect that these improved strains are (1) more vigorous than common bermuda, (2) similar to bentgrass in texture and (3) present less of a transition period during the bermudagrass-ryegrass changeover. Possibly of even greater importance is that our northern golfers think they are playing on bentgrass when these strains are used.

The better-known varieties are Tifton 127, Gene Tift, Everglades 3 and Texas 35-A. We strongly urge our Member Clubs in the areas mentioned to experiment with any or all of these strains. We would further point out that Colonial bentgrass and *Poa annua* deserve consideration in over-seeding the bermuda base. *Poa* is a natural companion grass for bermuda, and a few of our southwestern clubs report that bentgrass will hold on all season to eliminate the necessity for heavy reseeding each fall.

On teeing grounds the U-3 strain still receives our preference over common bermuda. Its finer texture, winter hardiness, earlier growth and greater vigor under proper management should encourage more widespread usage. On fairways common bermuda leaves little to be desired if it is mowed closely and fertilized adequately.

Red Fescuegrasses

Illahoe and Rainier strains of creeping red fescue continue to perform better than either common red or chewings fescue along the coast and in the Inland Empire of Washington and Oregon. All of the red fescues show up poorly in California valleys and in the Southwest. Furthermore, even where well adapted, they are relegated primarily to high-cut fairways and roughs. We seldom find them making any appreciable showing on tees, and they are absolutely worthless on putting greens, even though a few courses con-

tinue to seed a little fescue into the greens each year. Hard fescue (strain of Sheeps fescue) does the best job on SCS Plots at Pullman, Wash., under eight to ten inches of annual rainfall. Its future may be great for non-irrigated roughs.

Meadow and Tall Fescue and Perennial Ryegrass

To our knowledge there has been no improvement work done on meadow fescue for turf use. UCLA is starting a selection and breeding program that is long overdue. For fairway use in combination with bermuda it is a natural addition throughout much of the West.

Alta and Kentucky 31 fescue show considerable merit for roughs and hard-to-hold banks where close mowing is not essential. They have also been tried on fairways and tees with poor to fair success. The coarseness, tendency to bunch and tendency to produce hard-to-mow seedheads unless combed regularly overshadow the desirable attributes of wear resistance and drought tolerance. The heat tolerance of tall and meadow fescue also is a well established fact, and we will find these grasses growing in areas that are too hot for red fescues and bluegrass. Furthermore, they are fairly tolerant to alkaline conditions.

Quite often alta fescue seed is contaminated with ryegrass, and this may or may not be detrimental to the eventual stand, depending on location. Perennial ryegrass is a true perennial from the mid-California coastline north to Vancouver, B. C. In the inland valleys it is at best short-lived and not worthy of consideration. The main objection to ryegrass where adapted is its ragged appearance. Oregon State is starting some much-needed research on perennial ryegrasses.

Miscellaneous Turfgrasses

Much has been said in condemnation of *Poa annua*. We would point out that along the entire western coast and the higher elevations inland, *Poa* is being managed as a perennial, and thus is not an annual as the name implies. Even in the hot areas where *Poa* is a true annual, its prolific seeding tendencies make it a

natural companion crop for bermudagrass. We have observed many fine dense strains of this grass that provide ideal putting qualities and shudder to think what many golfers would do to their superintendents if *Poa* were suddenly to vanish from the scene. This most maligned of all turf grasses will someday attract the attention of a grass breeder who will slow its shortcomings for the benefit of our member clubs.

Redtop is still used to some extent in mixtures in seeding new areas and overseeding tees. We believe that much of this is done by habit rather than with thought for the eventual turf's benefit. Formerly

it was cheap in price and thus was used primarily as a filler in cheap grass seed mixtures. Today the price closely approaches that of good bentgrass which would be far more desirable.

Poa trivialis (shade bluegrass) is often noticed on teeing grounds and in wet, poorly drained areas where moderate summer temperatures prevail. Little is known about its desirable qualities although its presence on a tee, where it has not been seeded in many years, would indicate that wear resistance might be far greater than was formerly suspected. Here again selection and testing is a wide-open field.

NATIONAL GOLF FUND SUPPORTS TURF RESEARCH

By MARVIN H. FERGUSON

SOUTHWESTERN DIRECTOR AND NATIONAL RESEARCH COORDINATOR, USGA GREEN SECTION

Of the funds derived from National Golf Day in 1953, \$10,000 has been allocated for research in turf. The USGA Green Section was asked to make recommendations regarding the projects to be supported by these funds. Ten state research institutions, cooperating with the USGA Green Section, have accepted grants from the National Golf Fund.

Golfers who will match the net scores they make at their home clubs against the gross score Ben Hogan makes at the Baltusrol Golf Club, Springfield, N. J., on the forthcoming National Golf Day, Saturday, June 5, should be heartened by the following account of how turf research benefited from their participation last year:

Rutgers University, New Brunswick, N. J., is the recipient of a grant of \$2,000. This supports a fellowship for study of the causes of thatch in putting-green turf and methods of eliminating it. This problem is one of universal importance and Rutgers University is admirably equipped for undertaking a study of this nature.

The Texas Agricultural Experiment Station, College Station, Texas, has accepted \$2,000 in part support of an assistantship for the study of physical soil

properties in putting greens. Considerable information relating to this problem has been developed. There is still need for further study in order that the information available may be brought to bear upon the matter of soil compaction in putting greens. This is considered to be one of the most important problems in modern golf-course maintenance.

The Department of Horticulture of the Kansas State College, Manhattan, Kan., receives \$600 to be used in carrying out studies on clipping heights and their effect on the adaptability of turf species to the Central Great Plains Region. Other phases of research at Kansas State which are related to this consist of crabgrass and other weed control studies. The work proceeds under the able direction of Dr. William F. Pickett.

The University of California, at Davis, Cal., will use a grant of \$1,000 to support research in irrigation of turf. Watering of turf is one of the most poorly understood phases of golf-course management. Dr. R. M. Hagan, associate irrigationist of the University of California, has made outstanding contributions to a better understanding of watering practice. These studies have two objectives: (1) to save water, (2) to use water as effect-