



National Field Days were conducted jointly by the USGA Green Section and the U.S. Department of Agriculture. A view of the September 1939 Field Day at Arlington Turf Garden.

Golf Course Maintenance and Management - THE USGA'S ROLE

by **ALEXANDER M. RADKO**, National Director, USGA Green Section

IT IS GENERALLY agreed that the approximately 12,000 golf courses in the United States have the finest turfgrass playing surfaces found anywhere in the world. It wasn't always this way. Believe it or not, golf was once played in the streets in this country! The following document is on display at USGA headquarters, in Far Hills, N.J.:

THE HONORABLE COMMISSARY AND MAGISTRATES OF FT. ORANGE, AND THE VILLAGE OF BEVERWYCK, HAVING HEARD DIVERS COMPLAINTS FROM THE BURGHERS OF THIS PLACE AGAINST THE PRACTICE OF PLAYING GOLF ALONG THE STREETS, WHICH CAUSES GREAT DAMAGE TO THE WINDOWS OF THEIR HOUSES AND ALSO EXPOSES THE PEOPLE TO THE DANGER OF BEING INJURED AND IS

CONTRARY TO THE FREEDOM OF THE PUBLIC STREETS.

THEREFORE, THEIR HONORS, WISHING TO PREVENT THE SAME, HEREBY FORBID ALL PERSONS TO PLAY GOLF IN THE STREETS, UNDER PENALTY OF FORFEITURE OF FL. 25 FOR EACH PERSON WHO SHALL BE FOUND DOING SO.

THUS DONE AT FT. ORANGE, AT THE MEETING OF THE HONORABLE COURT OF THE SAID PLACE, ON THE 10 DAY OF DEC. Anno. 1659.

December 10th, 1969

Translated from the Dutch Municipal Records of Albany by Arnold J. Van Laer, Archivist, N.Y. State.

It is also generally agreed that golf has been a dynamic force in the turfgrass industry. In 1917, Dr. C. V. Piper and Dr. R. A. Oakley published their book *Turf For Golf Courses*. Piper and Oakley were U.S. Department of Agriculture scientists who were stationed at the Arlington (Va.) Research Station, now the site of the Pentagon. The book drew attention to two prominent scientists with knowledge of turfgrasses, which, in the United States, at least, was a rarity at that time. Influential people in golf sought governmental aid in golf turf management (even to the extent that Presidential influence was sought) to establish a scientific agency to which they could look for guidance and information in turfgrass management. Stimulation was provided by the disastrous loss of greens at the U.S. Open Championship at Columbia Country Club, in Washington, D.C. It was the right time and the right place and the Green Section of the United States Golf Association was born.

E. J. Marshall, a Toledo attorney, a member of Inverness Club and apparently influential in other areas, brought the U.S. Department of Agriculture and the U.S. Golf Association together. Dr. Piper agreed to serve as Chairman of the Green Section while he was head of the agronomy section of the USDA Research Station. It was the beginning of an organized approach to solving turfgrass problems on golf courses in this country.

Subsequently, all Green Section research results were reported in the Green Section's first official publication known as *The Bulletin of the Green Section of the United States Golf Association*. This publication was the first Green Section periodical. It was made available to all USGA Member Clubs, to non-member clubs, and to anyone else interested in golf course management.

What has been accomplished from inception to the present day? The Green Section has assumed a role of leadership in the field of golf course maintenance and management. The United States Golf Association has invested some \$4 million in Green Section operations since 1920. From 1920 through 1953, direct research, in cooperation with the U.S. Department of Agriculture, resulted in classic accomplishments made available in print to golf courses throughout the world, as follows:

- Published *The Bulletin of the Green Section of the United States Golf Association* from February 1921 through December 1933.
- Published *Turf Culture and Timely Turf Topics* through 1947 with brief interruption just after the depression years.
- Published the Turf Management section of the *USGA Journal* from 1948 through 1962.
- Published the *USGA Green Section Record* since 1963.

From 1920 through 1953, the Green Section conducted Field Days for anyone interested in turfgrass culture. Many golf course superintendents attended and benefited from research conducted at the USDA Research Stations at Arlington, Va., and at Beltsville, Md. Through these years, the Green Section was in large part responsible for setting maintenance guidelines for golf courses throughout the nation.

In 1932, Dr. John Monteith, then the Green Section Director, published *Turf Diseases and Their Control*, a classic study in turfgrass pathology. While controls have since changed, his description of the various symptoms associated with golf course diseases remains a classic reference.

In 1946, the Green Section initiated a bermudagrass research project with Dr. Glenn Burton at the Georgia Coastal Experiment Station. As a result, the Tifton series of bermudagrass hybrids were introduced to golf and were widely used throughout the world where bermudagrass can be grown. These Tifton varieties greatly improved playing conditions, and putting surfaces in particular, throughout the southern United States and was responsible in no small measure for the increased interest and participation in golf throughout the South. Now Dr. Burton has turned his attention to producing more winter hardy bermudagrasses. The Green Section is prominent in support of this important research project, which is designed to develop bermudagrasses that will survive winters throughout areas where bermudagrasses are grown and especially throughout the so-called "transition zone" where it is too hot to grow the cool-season grasses well and is too cold for the warm-season grasses to thrive.

In 1950, the United States Golf Association, in cooperation with the U.S. Department of Agriculture, after many years of research, released Merion bluegrass (B-27) as an improved Kentucky bluegrass. This was a major step in turfgrass improvement, and it made a tremendous impact upon the turfgrass industry. More recently, from 1967 through the present, the USGA has provided substantial support to a Kentucky bluegrass breeding program at Rutgers University under Dr. C. Reed Funk. As a result, several new and improved bluegrasses are now available to the turfgrass industry.

In 1951, Meyer (Z-52) Zoysia was released jointly by the USGA and the U.S. Department of Agriculture as an improved turfgrass. Meyer Zoysia is prominently used in difficult areas of the transition zone, since it is more winter hardy than bermudagrass.

In 1953, the Green Section changed its emphasis from direct research to extension, and the



Photo by W. J. Mead, U.S. Department of Agriculture

(Above) Merion bluegrass, one of the Green Section's proudest developments in cooperation with the USDA, exhibits the low-growing, dense shoot production that made it an outstanding bluegrass and set the standard by which all Kentucky bluegrasses were subsequently rated.

(Left) Green Section research described disease symptoms and established early controls that set standards in golf course maintenance that endured. The usual pattern of dollar spot.



USGA offered a Turfgrass Advisory Service whereby an agronomist trained in golf turfgrass culture would visit the course, discuss problems with the golf course superintendent and the green committee chairman and make his recommendations in a written report. This service has continued and, in fact, is being offered at a reduced price in 1979 in order that all clubs may avail themselves of this program. As an added program of reaching out to all clubs throughout the country, the USGA has embarked upon a series of regional meetings to be held at key points throughout the nation annually. There will be 13 regional meetings in 1979. Representatives of all clubs, whether they are USGA Member Clubs or not, are invited to these meetings. The meetings will feature discussions on specific subjects of interest to club officials and golf course superintendents in each region.

Although the Green Section's primary direction was changed, the USGA never lost sight of the importance of research. Since 1945 the USGA Green Section Research and Education Fund, Inc., has contributed in excess of \$650,000 to worthy research projects at universities and land grant

colleges throughout the nation. In addition to the work cited at Tifton and Rutgers, the USGA supports in the area of 25 projects annually. A few of them:

(1) *Poa annua* study at Michigan State University. Project Leader Dr. James B. Beard. This six-year study culminated in the publication of a *Poa annua* bulletin (Research Report 352) which recently was forwarded to superintendents and green committee chairmen at all USGA Member Clubs. This bulletin is available from Michigan State University Bulletin Office, P.O. Box 231, East Lansing, MI 48824. One copy free and for all over one copy, the cost is 50 cents per copy.

(2) Bentgrass breeding program at Pennsylvania State University. Project Leader Dr. Joseph Duich. This project has been continuously in effect since the early 1950s. It is designed to introduce better bentgrass seeded varieties to golf courses throughout the world.

(3) Machinery improvement for golf courses. Project Leader Dr. B. P. Verma, University of Georgia. An improved soil mixing machine, an improved thatcher and a new attachment for mechanical sand rake machines that will screen gravel out of bunker sand. These improvements were described in articles in our *USGA Green Section Record*. When some manufacturer adds them to his line, they will benefit golf course maintenance.

(4) Electrostatic spray technique for applying chemicals to turfgrasses. Project Leader Dr. S. E. Law, University of Georgia. This research project is designed to reduce costs by greatly increasing efficiency of spraying chemicals on turfgrasses. Its implications are far-reaching environmentally also.

(5) Turfgrass wear studies at the University of Michigan and Texas A & M University. Project Leader Dr. J. B. Beard. This project is designed to rate wear qualities of all major turfgrasses when trafficked to maximum, thereby defining grasses for specific areas subject to wear on golf courses throughout the country.

(6) The research article by Dr. Roy Goss and included in this issue is another example of USGA support of projects designed to help golf course superintendents in their management programs.

(7) Beginning in the 1940s the Green Section Staff became intensely interested in methods of putting green construction. A research project was established at Texas A & M University which culminated in a USGA specification for putting green construction that has been widely accepted throughout the world.

(8) In 1950, the USGA sponsored the book *Turfgrass Management*, by H. B. Musser, of Pennsylvania State University. It was revised in 1962. Presently, Dr. James B. Beard is writing an entirely new book for the USGA which is due to be published in 1979. It will be an excellent addition to the library of anyone interested in the science of golf course maintenance and management.

(9) In 1976, the USGA developed an improved Stimpmeter, a device for measuring green speed

and uniformity, and made it available at cost to all clubs throughout the world. Clubs interested in purchasing a Stimpmeter may write to the USGA, Far Hills, N.J. 07931.

(10) In recent years, the Green Section defined a particle size range for bunker sand and for use in topdressing mixtures for putting greens. This information was published in the November, 1977, *USGA Green Section Record*.

The research support by the USGA Green Section Research and Education Fund not only was instrumental in getting research done on needed projects, but it also trained leaders in the field of turfgrass management. A partial list of prominent leaders who received graduate level financial support from the USGA Research and Education program is as follows:

James B. Beard	Raymond Kunze
James E. Bogart	W. C. LeCroy
Cecil Brooks	David P. Martin
Lloyd Callahan	Wallace Menn
Scott Cameron	Miles S. Nelson
William H. Daniel	George A. Niles
R. R. Davis	Tom Perkins
Elwyn Deal	Sim A. Reeves
Albert Dudeck	Terrence Riordan
Joseph M. Duich	B. P. Robinson
James R. Fulwider	Charles Rumberg
Fred V. Grau	Richard E. Schmidt
Jack Harper III	Robert C. Shearman
Thomas K. Hodges	Robert Spartnicht
Leon Howard	James R. Watson
Edward Jordan	Gary Wilson

The Green Section's 10 staff members are also involved in presenting papers at national and regional meetings and conferences. They also write articles for turfgrass publications that reach most turfgrass managers. The staff attends field days and other turfgrass meetings to lend their expertise in the field of golf course maintenance and management to others. In sum total, the Green Section is a scientific agency whose mission is to assist USGA Member Clubs in the upkeep of their golf courses. That purpose has remained constant throughout its existence. The Green Section has developed grasses, materials and methods now in standard use. It has helped greatly in raising the level of maintenance of golf course conditions throughout America. The Green Section was the pioneer and is still a chief authority. The Green Section's effect on the turfgrass industry has been sometimes described as similar to dropping a stone in a millpond . . . resultant waves endure endlessly!

The Green Section of the United States Golf Association exists for the sole purpose of assisting clubs with their turfgrass problems. USGA membership and its services are open to all clubs — be they private, public, municipal, government, par 3, executive or other. The effects of our research, education and extension services affect the entire turfgrass world. All courses, all superintendents, all club members and club officials benefit in some ways whether they are USGA Member Clubs or not.