

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

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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-

ively as possible for the growing of better turf.

Purdue University, Lafayette, Ind., is the center for turf research in the Midwest. It has accepted a grant of \$1,000 to be used in a study of disease resistance in bluegrass. The University has assembled a large number of bluegrass selections from widely scattered areas. It is believed that some of these types may be resistant to some of the more serious diseases that attack bluegrass. Merion bluegrass, which is highly resistant to *Helminthosporium* leafspot, is the product of a similar selection and testing program which was conducted by the USGA Green Section prior to World War II. Such a study holds great promise.

The College of Pharmacy of the University of Illinois maintains an experiment station in Chicago. Staff members have been very helpful to golf-course superintendents in the Chicago area. A grant of \$1,000 has been placed at the University of Illinois, and it will be used to finance a fundamental study of *Poa annua*, chickweed and crabgrass. These are the three serious weed pests of northern golf-course turf. Too often weed control studies are undertaken without a complete understanding of the strength and weaknesses of the plant to be controlled. A study of the kind proposed will contribute a substantial "building block" to our structure of fundamental knowledge.

A grant of \$1,000 has been accepted by the Georgia Coastal Plain Experiment Station, Tifton, Ga. Tifton is recognized as the center of southern grass breeding studies. Dr. Glenn W. Burton, under whose direction this grant will be used, is one of the world's outstanding grass breeders. The grant will be used to support the further development of bermudagrass strains that will provide superior turf for golf courses in the South.

Cornell University, Ithaca, N. Y., has accepted a grant in the amount of \$600. Cornell scientists have devoted a great deal of attention to the control of weed and insect pests in turf, and they have pioneered in the field of studying grass-seed mixtures. Much has been accomplished in the direction of focusing at-

ention upon the practice of using annual or nurse-grass species to make up a large percentage of the grass seed mixture. The offering of good seed mixtures in the trade will result in better turf at lower cost on the golf course. It is proposed that this grant shall help to support such work.

A grant of \$500 has been accepted by the Oregon Agricultural Experiment Station, Corvallis, Ore. The money will be used in support of a study of possibilities for commercial scale production of seed of *Poa annua*, *Poa bulbosa*, and other annual winter-growing grasses that may come into greater use in winter turf in the South. Oregon is the center of turf seed production in the United States. Workers at the Oregon Agricultural Experiment Station are particularly well qualified to investigate matters pertaining to seed production.

Colorado A & M College, Fort Collins, Colo., has accepted a grant of \$300 which is to be used to get turf investigations started in the Rocky Mountain area. It will be used in conjunction with two turf scholarships which were established at Colorado A & M by the Trans-Mississippi Golf Association and which were described on page 16 in the USGA Journal of February, 1954. It is felt that these turf scholarships will be much more valuable to the recipients if turf investigations are being carried on at the College.

WATER QUANTITY AND RATE OF FLOW

One acre inch of water contains 27,080 gallons. If you have a pond that measures 208.7 feet square, this would equal one acre, or 43,560 square feet. If this pond were 15 inches deep, you would have 15 acre inches of water, or 27,080 gallons times 15, of 416,200 gallons, in your reservoir. If this pond is stream fed and your rate of flow in this stream is one cubic foot per second, you would be supplying one acre inch per hour, or 450 gallons per minute to your pond. 27,080 gallons of water is the average amount used in your home over a 5-month period. *The Bull Sheet, Vol. 7, No. 8, February, 1954.*