

intendent has only one boss, not 300, and any criticisms or suggestions must come to the Chairman, not to the superintendent.

Another difference which has been resolved is the desire of the low-handicapped man to lengthen the holes or tighten the greens with bunkers and the desire of the 100 shooters either to leave the course as is or make it easier. This has been resolved by eliminating all bunkers that merely penalize the 100 shooter and installing bunkers at the greens which penalize a bold shot gone wrong. If a scratch player wants to attempt to reach a green on his second shot, a bunker requires a shot to be perfect. But the 100 shooter, who is satisfied to reach the green in three or four, is not handicapped particularly by the tight green.

A conscientious Chairman must be mindful of the fact that he and the superintendent must exert every effort to provide the best possible course for the pleasure and pride of the membership. But he has learned from experience that most members are somewhat myopic. The average member is interested only in the immediate. He finds it difficult to understand, for example, why we should spoil a beautiful green, and his game in the early spring, by brushing and topdressing. Naturally he knows nothing of the consequence of matting, and therefore it means nothing to him. He is thinking in terms of today's play, not the many tomorrows.

The Chairman must support the super-

intendent in his programs when they are known to be beneficial, even though they risk the displeasure of members. Like the surgeon who may amputate a leg to save the patient, the Chairman and the superintendent must be willing, however reluctantly, to displease and be criticized and spoil a few days play, rather than multiply the bad days of the future.

#### **No Appeasement**

For the superintendent and Chairman to do a good job and succeed in giving the most pleasure to the members, they must not be appeasers in order to postpone criticism. They must not be thin skinned and permit the jibes and taunts of a few or even many of the members to get under their skins and tempt them to entertain the idea of throwing in the towel.

Acting from a genuine motive—to do everything to build better turf for the members' enjoyment—the superintendent and Chairman must pursue their efforts, willing rather to be replaced than to let possible criticism induce them to avoid a necessary, if annoying, practice.

It must not be inferred from the above observation that constructive criticism and suggestions should not be welcomed. Indeed, they should be invited. In our interest and absorption in our work we often neglect many details of grooming the course, or some detail or inconvenience, and a suggestion or criticism of a member may be a welcome reminder.

## **The Turfgrass Research Program at Texas A. & M.**

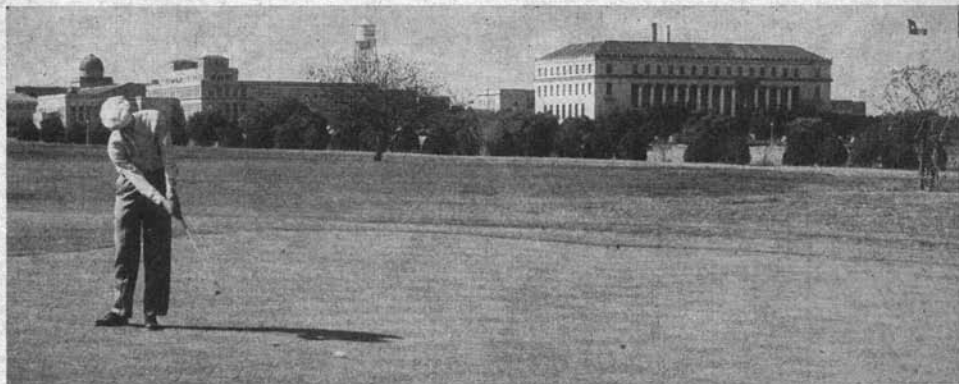
**by MARVIN H. FERGUSON**

*Southwestern Director and National Research Coordinator, USGA Green Section*

**T**HE FIRST Texas turfgrass conference was held in 1947. An enthusiastic group attended and during the conference the Texas Turfgrass Association was formed. The purposes of this Association were to foster and support research on turf problems of importance in the state.

Since the founding of the Association much progress has been made in the development of turf-management informa-

tion. A research program was inaugurated by Texas A. & M. College immediately following the first turf conference. The early efforts were on a relatively small scale, because there was a scarcity of funds for support of the work. Accumulation of a large number of different types of bermudagrass which were known to exist in the turf areas of the state was considered to be a matter of primary importance. The



*The Texas A. & M. College Golf Course is located adjacent to the campus. Pictured above is the No. 1 green, with the Administration Building in the background. In addition to its value as a recreational facility, the golf course provides an excellent opportunity for carrying on turf investigations under playing conditions.*

major emphasis was placed upon the selection and evaluation of desirable turf types.

#### **Evaluation of Bermuda Types**

The selections which were brought together were evaluated on their performance relative to turf quality for such purposes as golf-course putting greens, fairways, tees, home lawns, athletic fields, road shoulders, airfields and cemeteries. Since the inception of this program some 125 selections have undergone field-plot testing and evaluation for various turf purposes. Several fine-leaved strains have been determined to be capable of producing superior putting-green turf. These include T-8, T-11, T-35A and T-94. Of these, T-35A and T-94 have demonstrated marked superiority and are beginning to find considerable use on golf courses. Broader-leaved strains which have appeared to be outstanding are T-22, T-47 and U-3. U-3 was selected at Beltsville but has been included in these tests for purposes of comparison. T-47 is an especially vigorous compact strain which appears to be excellent for heavy-use areas. It is expected that a great many athletic fields will be planted to this strain as soon as vegetative material becomes available commercially.

The turf research program in Texas has not been confined to the field plots at the Experiment Station. Because of geographical and climatic variations within the state,

it has been necessary to conduct tests in more than one location. Under the joint sponsorship of the Texas Turfgrass Association and the Texas Agricultural Experiment Station, field tests have been established in Wichita Falls (Park Department), Dallas (Park Department), San Antonio (Park Department), Lubbock (Texas Technological College) and on numerous golf courses throughout East Texas where putting-green strains are being evaluated. The research program at Wichita Falls has been quite extensive. In actual numbers of plots, the program has exceeded that being conducted at College Station. Much valuable information has been gained from this field testing program.

#### **Testing Nutrient Requirements**

One of the outstanding tests conducted at both College Station and at Wichita Falls has been a rather elaborately designed test for determining the nutrient requirements of bermudagrass. This experiment was conducted by use of a factorial design in which four rates of nitrogen (0, 4, 8 and 12 pounds of N per 1,000 square feet, respectively) per year were used; four corresponding rates of  $P_2O_5$  and  $K_2O$  were used. These treatments were applied in all possible combinations and were replicated three times. The work is continuing but results to date have indicated that bermudagrass in Texas needs at least 8

### **Turf Management**

The book "Turf Management," sponsored by the United States Golf Association and edited by Prof. H. B. Musser, is a complete and authoritative guide in the practical development of golf-course turfs.

This 354-page volume is available through the USGA, 40 East 38th Street, New York 16, N. Y., the USGA Green Section Regional Offices, the McGraw-Hill Book Co., 350 West 42nd Street, New York 36, N. Y., or local bookstores. The cost is \$7.

pounds of nitrogen per 1,000 square feet per year. Indications are that if plenty of water is available and if the turf can be mowed frequently, bermudagrass can use efficiently as much as 12 pounds of nitrogen per 1,000 square feet per year and possibly more. Phosphorus and potash have shown less effect than nitrogen on turf quality. It is believed, however, that on soils that are naturally low in phosphorus and potash some additional amounts of these nutrients should be applied. Current recommendations based on these tests call for the application of 10-5-5 fertilizer in the spring and the use of straight nitrogen materials thereafter throughout the year.

Financial support for the Texas turf research program has come from state appropriations and from grants-in-aid. Grants-in-aid have been made by the USGA Green Section, the Texas Golf Association, the American Cyanamid Company and Goldthwaite's Texas Toro Company. In addition to these grants, many smaller contributions by individuals and other organizations have been made to the program. The largest single source of support has been from Goldthwaite's Texas Toro Company. Their substantial contributions of money and supplies in the early days of the Texas program kept it going. At the present time, state appropriations represent the major source of financial support, with services and supplies still being contributed by Goldthwaite's.

In July, 1953, USGA Green Section established a regional office at Texas A. & M. College in cooperation with the Agronomy

Department of the Agricultural Experiment Station. Shortly thereafter an assistantship was established for the purpose of studying physical properties of soils as related to putting-green turf. Raymond Kunze was chosen to fill this assistantship, and at the present time he is engaged in research having to do with physical properties of soils. It is expected that this study will yield a great deal of valuable information relative to the construction of putting greens.

### **Experiments Under Playing Conditions**

A cooperative relationship has been established recently between Texas A. & M. College Golf Course and the Department of Agronomy. Henceforth, turfgrass research work will be done on the golf course under actual playing conditions. This arrangement will provide efficient maintenance because the turf on the golf course must be maintained regularly and the labor for research purposes may be conserved. This arrangement offers an opportunity to test strains and management practices under actual play, thereby getting away from one of the criticisms that is ordinarily leveled at turf research at State Experiment Stations, namely, the conducting of experimental work without traffic. It is believed that golfers at the College Golf Course will exhibit considerable interest in research work being conducted and that the small amount of inconvenience that may be caused them will be more than off-set by their interest in what is being done for the betterment of turf.

At the present time, under the leadership of Dr. Ethan Holt, the Texas A. & M. turf-research program is one of the outstanding programs in the nation. Dr. Holt has numerous plans for future work. Among them are programs of Dallisgrass control research, continued fertilizer research, investigations in the establishment of winter greens and the efficient transition from winter greens to summer greens. There are many problems confronting turf growers in the Southwest, and it is believed that the facilities and personnel at Texas A. & M. College are in a good position to solve them.