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SPALDING

Sets the Pace in Sports

—Grau photo

Threshing scene at Beltsville Turf Gardens, July 1951. The crop is Japanese lawngrass. This is one of the Green Section's principal projects in working toward better turf.

Turf Round-up of 1951

By FRED V. GRAU

Director, USGA Green Section

Nature has continued to sift the wheat from the chaff all along the line. Extremes of moisture and the lack of moisture, and unexpected extremes of temperatures, disease attacks and weed infestations have clearly indicated the weak points in the existing grasses and in various systems of management. The small band of scientists who study the intricacies of Turf Management from the technical standpoint has not been able to evaluate in sufficient detail the true relationships of the many interrelated factors that determine success or failure. Certain trends, however, become steadily more significant.

Because they were there others will be able better to tell the story of how the floods damaged turf in Kansas City and other river cities, or of how first the big freeze and then the prolonged drought and terrific heat in Texas ruined bermuda turf and how unusual weather hurt the grass seed crops in the Northwest. These and other unusual and unexpected pranks of Nature place a high premium upon resourcefulness and sheer ability on the part of the golf course superintendent. The observational powers of the individual become of paramount importance in discovering and evaluating clues to satisfactory recovery of damaged turf and to the development of a sound program of renovation and of preventions for the future. Never before has it been so important for the turf superintendent to develop to the full his faculties for sifting every disappointment for avenues of improvement. Every failure of a turf area contains the elements of success if we will read the signs accurately, interpret them correctly, and put into action the lessons learned. Most important, then, is the need for the practical man to work even more closely with the technical worker and to reveal for the good of the profession as a whole the true facts back of successes and failures.

Hats Off To GOLFDOM

It becomes a particular privilege to write the 1951 Turf Roundup for GOLFDOM on the 25th Anniversary of its founding. The world of Turf Management is infinitely richer for the unparalleled contributions made through the pages of GOLFDOM. The far-sighted planning of Herb and Joe Graffis has been uncanny. The distinctive flavor which they lend to every gathering they attend can not be duplicated anywhere. Hats off, then to GOLFDOM and to the Graffis clan for everything they have done for Golf and for Turf.

Orchids

Joe Valentine, dean of golf course superintendents, progressive, energetic czar at

Merion Golf Club, Ardmore, Pa., receives a golf bag full of orchids for spotting the patch of bluegrass twenty years ago which has come to be known as Merion bluegrass. Joe's keen powers of observation have not lessened. Fifteen years ago he designed and made a set of rakes or combs to fit on the fairway mowers to reduce crabgrass — and they worked. As Chairman of the Turf Advisory Committee ever since it was formed he has been a vital factor in helping to build the turf program in Pennsylvania. It was through his efforts that the State Legislature appropriated $10,000 for turf research at Penn State about 1928. And for a beautiful set of records just glance through his books. He was among the first to aerify championship turf. His zeal for perfection is second to none. Recognition for his matchless contribution is richly deserved and long overdue. Hi, Joe!

A Report on the Green Section

Because the USGA Green Section is playing such an active part in developing the National Coordinated Turf Program, we beg your indulgence while we bring to the readers of GOLFDOM the latest on Green Section Activities. We would like to have it clearly understood that anything we say concerning technical advances is not to be construed as a recommendation for local action. It is one privilege to encourage and to record progress, not to make recommendations for individual cases through these columns. We like the adage, "You'll never know how good it is until you try it."

The 1951 staff of the Green Section has consisted of:

Dr. Marvin H. Ferguson, Research Agronomist, on leave to MATS

Charles G. Wilson, Extension Agronomist

Alexander M. Radko, Research Agronomist

Fred H. Williams, Executive Secretary
Anne L. Drennan, Clerk
Fred V. Grau, Director

William Knight helped on the plots until September. Robert Elder, a student from Penn State, is helping now. With this staff we have been able to attend almost every turf conference and field day in the United States and Canada, to attend to all requests for advisory service, to handle an unprecedented volume of mail and phone calls, to conduct greenhouse research on nutrition of Merion bluegrass, and to maintain several acres of test plots. More articles have been written in 1951 than in any previous year.

In July the Green Section office was moved from the South Building to the Administration Building. We now occupy four rooms overlooking the big front lawn on U. S. Highway 1. The move was advantageous for efficiency and elbow room.

Turf Research Review (second edition) was published early in the summer of 1951. It is a nearly complete compilation of research in Turf in the United States, including conferences, field days, workers, financial aid, and a listing of current publications. At $1.25 a copy the reserve supply is dwindling fast. We hope that every progressive superintendent will have one in his library.

USGA's book, Turf Management (McGraw-Hill, $6) by H. Burton Musser has filled a real need. Inquiries on simple fundamental problems have slowed to a walk since green chairmen and superintendents have read the book and discussed the various points. Many books are in use by turf superintendents other than golf, particularly athletic fields. Many clubs still are without the book, a serious oversight.

Fred V. Grau

The new USGA policy to render advisory service for travel expenses and a fee has been accepted by a few clubs but has been viewed with a tongue-in-cheek attitude by most. Clubs would like Green Section staff to meet with local groups and to make friendly visits without charge. This arrangement would be most acceptable to the Green Section and to superintendents except for the fact that travel funds are lacking and no satisfactory substitute for money has been discovered. Reimbursement for travel to turf conferences has been most welcome but some groups find it rather costly and have started to pull in their horns.

State and regional stations more and more are developing their own advisory service to Turf interests. This development has the full support of the Green Section because (1) they can do a better job knowing local people and conditions more intimately, (2) it costs the clubs less money and, (3) it builds a stronger local program and thus a stronger national program.

Cooperative Research

Cooperative research with the USDA Bureau of Plant Industry continues. Contrary to popular opinion the USGA Green Section receives no government subsidy. Actually, the shoe is on the other foot with the Green Section paying its full share of "rent" for using government facilities. With recent heavy cuts in the Bureau of Plant Industry budget, all USDA turf personnel has been transferred to outlying stations. Ian Forbes goes to Tifton, Georgia, about October 1, leaving most of

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the cooperative work in the hands of the Green Section staff. Some of the pilot research projects may be dropped. Certainly no new projects can be contemplated unless a new source of revenue can be tapped to augment the Green Section labor force (one man, to date). This is just about enough help to keep the plots mowed and fertilized.

Cooperative research with state experiment stations has developed beyond our fondest dreams. The program is on a sound level foundation now under a plan of friendly coordination which is producing

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FROM ANOTHER VETERAN

Twenty-five years of GOLFDOM have meant 25 years of service to the business side of golf.

For this service all golfers are grateful.

You always have stood for the best in the game and cooperated in all worthwhile promotions.

Congratulations and may GOLFDOM continue for many years to come.

JAMES D. STANDISH, JR.
Pres., USGA

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excellent results efficiently. Three major achievements can be cited as the direct result of the Green Section cooperative decentralized program:

1. Many scientists are participating. Seven years ago about 10 people were active in Turf work in the United States. Today the number is close to 100.

2. A growing pool of vital research data is accumulating for use by extension people to give to the practical user. The Green Section's Turf Research Review lists all known projects.

3. A group of keen young men has been trained in Turf Management. They are accepting positions of trust and responsibility in research, teaching, extension and industry. These men had to be trained first before there could be developed an effective plan of SERVICE.

Green Section Service Subscriptions have grown steadily without fanfare or high-pressure propaganda. Nearly 200 firms dealing in Service To Turf belong to the Green Section's official family at $35 a year. Twenty-four dollars and fifty cents of each subscription goes into the Green Section education fund to support cooperative research and extension activities. Ten dollars and fifty cents goes to the USGA general fund to help cover Green Section costs incurred in servicing the subscribers. Many seedsmen have discovered that a Green Section service subscription helps them to keep ahead of their customers in the "new" things. Several golf course superintendents associations have given a helping hand. USGA member clubs are beginning to realize that a Green Section service subscription, in addition to their $35 membership dues, doesn't hurt but really helps. Piping Rock on Long Island was the first USGA club to take a subscription. Thanks, Jim Baldwin.

Turf Research Fellowships and Research Grants are established as the need is felt and as approved projects are presented. The problem today is to find qualified men to take the several fellowships that are vacant. The Green Section will entertain requests for grants-in-aid to develop better service to member clubs and to subscribers. If research must wait for more settled world conditions we can develop more fully the information at hand to present in useable form for the practical man who is faced with every-day problems of turf maintenance.

The Turf Advisory Committees have been major factors in providing a strong link between the college and the field. Success in every state or regional turf program very nearly can be measured on the basis of the strength of the advisory committee. The committee, properly constituted and recognized officially by the college administration, has power far beyond its original purpose of helping to designate needed research projects. It can lend valuable support to the research staff by making requests for money and equipment to the responsible parties and, when needed, it can become a powerful friend of the college in official circles. Any research staff that operates without a strong officially-designated Turf Advisory Committee lacks an essential part of the working mechanism. Cooperative projects in which the Green Section participates financially are easier to plan and to execute with the backing and the counsel of the Committee — and the project usually is developed on a sounder basis. Some of the more active committees operate in connection with Penn State, Tifton, Purdue, Oklahoma, and California.

Problems to be Solved

Many unsolved technical and practical problems confront the superintendent who must produce satisfactory turf in spite of — well, everything. Before we go further into these problems let us quickly review some of the major accomplishments and see if some problems still exist.

Weed Control. No need for weeds to exist in turf when existing knowledge of good management, chemicals and equipment is applied. Some Exceptoins: Dallasgrass and sandspur, in roughs; bent in athletic fields.

Aerification. Compaction of soils can be corrected with minimum inconvenience to players. Problem exists of learning most efficient use of equipment and "selling"

the principle of soil cultivation to apprehensive officials.

Disease Control. Generally adequate (except for pythium) where proven principles are applied intelligently. Some diseases, like leafspot on bluegrass, can be overcome only by developing and using resistant varieties.

Insect Control. Very close to 100% with modern insecticides and practical research on control methods. "Insect control is the first step in weed control." Moles and skunks quit, too!

Better Grasses. Better bent grass strains have been in use for years — now polycross bent seed is the latest achievement. New bluegrasses, fescues, bermudas, zoysias and tall fescues are knocking at the door. The problems here are (1) to raise funds to put more plant breeders to work on developing strains under the worst possible soil and climatic conditions (Washington, D. C.; and St. Louis, Missouri; for example and (2) to test thoroughly each new grass before releasing it for increase and use.

Now, in the UNSOLVED category come a number of "toughies" which deserve attention. Here are a few:

Annual Bluegrass. Annual bluegrass, known as Poa annual or, more often as just plain Poa, now occupies the No. 1 spot in the unsolved category, replacing crabgrass and its odius henchman, goosegrass. Several experiment stations cooperating in the National Coordinated Turf Program have increased their emphasis on the Poa problem each working for the time being somewhat independently on pilot investigations and a field survey. It is expected that these efforts soon will be coordinated so that we do not waste scarce manpower and insufficient funds in unnecessary duplication.

Three principal avenues of approach are apparent at this time:

1. Destroy it completely with chemicals and replace it with a strong competing grass which will prevent its return.

2. Stop seed production by controlled use of chemicals, thus breaking the cycle.

3. Make use of it by providing a suitable summer companion grass which is strong when Poa is weak. Other methods quite likely will be discovered.

More Nurseries Needed. Nurseries of replacement sod and of new or improved types of grasses can be found at only a small percentage of golf clubs. There is a real need for more intensive local study of new developments. Regardless of how enthusiastic we become about improved turf grasses which someday will make the superintendent's work easier we are continually reminded that there is a lot of day-to-day maintenance on just ordinary grasses which needs doing. We must continue to try to improve what we have, discouraging though it may be at times. But, while this is going on there is no good reason why nearly every superintendent should not have a nursery of every improved grass which becomes available. Only in this way can one gain knowledge of performance under local conditions. Each nursery in effect becomes another experiment station, particularly if it is associated closely with the research and extension personnel of the state college or of the Green Section.

—Mascaro photo

Merion bluegrass seed production gets a trial in 10-acre patch on T. L. Gustin's farm, Buckingham, Pa.

How to Aerify. Needed cultivation of soil under turf often is neglected because of reluctance to disturb playing surfaces (even temporarily) when turf looks good. Cultivation at right time may mean good turf through a bad period vs. possible loss of turf. The demonstration in October 1946 on the fairways at Lu Lu Temple in Philadelphia was the turning point in the approach to the problems of soil compaction, runoff, puddling and improved methods of renovation and seeding, etc. We still don't know all the answers to When, How Often, How Deep, etc.

Problem of Mistaken Identity. Positive identification of insects, diseases, weed grasses, etc., brings the scientists of all agricultural fields into play in turf management. Sod web damage has been diagnosed erroneously as dollarspot with disastrous results. The control of one type of grub may be quite different from another type. Know your grasses, your weeds, your diseases. The big problem is to bring these questions to the attention of the research and extension men in each field.

Sensible Watering. Proper watering of turf is a subject that is getting a lot of attention in research as well as on the turf. In all too many cases water is applied faster than the soil can absorb it. It is known that increasing the quantity of water applied per minute actually can result in less water entering the soil. Research on this subject is progressing satisfactorily. The Green Section has been active in supporting three 3-year turf research fellowships leading to the Ph. D. degree and has established one additional research grant on the subject. Now comes the more difficult task of getting the research data applied to the golf course. Will superintendents use the information available to them? Are there enough trained extension men who are qualified to plan result demonstrations and to evaluate present watering schedules? Well-fed turf of perennial grasses growing on well-drained soil of good structure can get along better on infrequent irrigations "as needed" than starved turf on compacted scils with poor drainage.

Height of Cut. Height of cut of turf playing surfaces presents a particularly difficult problem because it is associated with so many varying degrees of individual opinions. It is affected by the kind of grass present, the climate, the soil, water management, fertility level, density of the turf, frequency of cutting, and so on. It is affected by the proficiency of the many people who play golf, from the playing professional to the highest handicap player in the club. But surely there must be some middle ground.

The teeing ground is most satisfactory when it is cut short and often so that no grass blades can come between the club face and the ball. It may be further said that a dry, firm turf is very desirable. Most good tees today are cut one-half inch or less. Many bent tees are cut 4/16-inch to 5/16-inch.

The putting surface must be true and "reasonably fast." There is no standard specification — it must always remain a matter of judgment. In some cases the putting surface is slow, it is not mowed often enough, it is cut too high. But here again "height of cut" is a relative term whereas "good putting quality" is the desired end result. Matted, stringy turf, with lots of "grain" is not a satisfactory putting surface. It may be "beautiful" in color but unless it putts well the job hasn't been done right.

The most bitter controversy rages over the proper height of cut on the fairways. Again, there is no standard specification but any player good enough to be on the fairway is entitled to a "premium" shot. Too often the ball nestles deep in lush soggy turf which, for its condition, may be cut too high. In many cases we find players hoping that the ball finds the fescue rough (which may be dirt-brown) where they will get a better shot than in the fairway. When this situation exists something is wrong! Maybe it isn't height of cut but something needs improving. The proper height of cut is that which makes players come in saying, "Jim, I'll bet we've got the finest fairways in the country. They really play swell!" Time and time again we have inspected the regular fairways about which the players have been complaining bitterly because of soft, deep lies and their inability to play a clean shot when they are forced to dig the ball out of the turf. Then we would walk over the practice fairway which never gets any water (just natural rainfall) and we find the ideal playing turf where a bad lie can't be found and every shot is a clean, crisp one. (Note: This doesn't hold in arid regions). Sure, the turf gets brown now and then during drought but it still plays well! What is the answer?

Maybe our talk is all academic. If the water supply of the nation keeps dropping we may have to maintain golf courses without artificial watering. Much of the work of the Green Section at Beltsville is designed to learn how this can be done. We don't say that we know yet but we're learning how to produce good playing turf at Beltsville under close mowing with little or no artificial watering. We still maintain that turf should be cut so that it is fun to play golf! If the turf can be cut closely to provide a good firm lie for the ball and still delight the non-golfing member who judges quality by the color of the golf course, then the superintendent has done a real job worthy of highest praise.

Some of the other problems lie somewhat

in the future but deserve mention for the record.

Vacuum Cleaners for Fairways. As the density of fairway turf increases, clippings on the surface present a problem of disposal. Clippings tend to harbor diseases. Some types of fairway turf may be better with clippings removed.

An accelerated program of seed increase of improved grasses is needed. The Green Section has been severely criticized for creating a demand for improved grasses before adequate supplies of seed or sod exist. In defense of this criticism we explain that growers are reluctant to produce a new grass until a demand is felt and until a ready market is assured. Merion bluegrass is the classic example.

Fertilization of Turf. Results of many field experiments designed to evaluate fertilizers and fertilizer materials on turf have been discarded because grass diseases have ruined the turf so that weeds (crabgrass, broadleaf, etc.) made up most of the population. Classic examples have occurred at Penn State and at Beltsville where tests on common bluegrass had to be terminated because the bluegrass failed. In general, future field tests will be established only on improved turf of disease-resistant varieties which will yield dependable results. As new grasses are released, each must be studied for fertilizer response.

The problem of fertilizer placement seems to be diminishing as aerifying equipment allows material to penetrate into the root zone. We still lack accurate measurements but practical results are apparent and are encouraging.

Research continues on the ureaform fertilizers with commercial production coming a step closer to reality. Results indicate that they perform about like the good organic nitrogen fertilizers and may be expected to supplement the limited supply of organics.

Something About the Turf Grasses

Zoysia research continues to expand with the major portion of it still concentrated under the USGA Green Section and the Bureau of Plant Industry at Beltsville, Maryland. Cooperating stations which are conducting zoysia research include Rhode Island, Massachusetts, New Jersey, Pennsylvania, Tifton, Purdue, Texas, Oklahoma, Iowa, Nebraska, Kansas, Kentucky, Michigan, Wisconsin and California. A great deal of interest centers around the development of the Z-52 strain of zoysia which currently is under imminent official release by the Department of Agriculture and the USGA Green Section for clonal or vegetative increase. Incidentally, Z-52 zoysia makes a good crop of seeds at Beltsville after the second or third year in solid nursery stand. Again, strangely enough, this seed, when planted, produces a turf which has almost the same texture as the parent plant.

This is the kind of turf that brings exclamations of pleasure from people who walk on it the first time even when it has had no rain or artificial water for six weeks or more. Placed side by side, alone and in combination with the better cool-season grasses, the Z-52 strain presents a much more acceptable appearance than the common Japanese lawngrass (Zoysia japonica) for many years.

Recommendations to date are based mainly on technical considerations of method, time, and rate of planting, height of cut, introduction of cool-season grasses, and other details. So far as choice of strains or species is concerned this is pretty much a local proposition.

The Green Section makes no specific recommendations as to the type of zoysia that anyone should plant but suggests making trial plantings and making haste slowly. A nursery bed of different types of zoysia quickly will tell anyone which type they would like to continue. From observations to date across the country it is clear to us that most golf courses will prefer to wait for seed or planting material of the finer-bladed, improved strains of zoysia which is coarse-bladed, does not tolerate close mowing well, and becomes dormant much more quickly in the fall.

—Mascaro photo

Joe Valentine examines turf in his Merion bluegrass on No. 15 fairway at Baltusrol GC, Springfield, N. J.

There is a tremendous need for the common type of Japanese lawngrass on airfields, roadsides, industrial lawns, embankments, and many other areas where fine texture is not essential. Common zoysia falls into about the same class as Alta and Kentucky 31 fescues so far as turf is concerned. Leaf width is about the same, color and texture are similar, and in many cases they make excellent companion grasses. Under some circumstances of

(Continued on page 117)

CHOOSE FROM FIVE

F-G '51 model AERIFIER for fairways

The F-G '51 is an improved model of the original tractor-drawn Aerifier. Lowering and raising of spoons is accomplished quickly and easily by hydraulic control. Adjustable cultivation depth provides greater range of usefulness. The same implement can be used to cultivate the surface for seedbed preparation or to cultivate deeply to improve soil and encourage root growth.

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Each Aerifier unit is equipped with 108 spoons. Makes more holes at each cultivation than any other type of aerifying tool.

Use the F-G model Aerifier for rapid, thorough cultivation of fairways. Can be used, too, on greens and tees wherever grading permits operation of a tractor-drawn implement.

The F-G '51 can be equipped with inch or ¾ inch diameter spoons for cultivation of fairways and tees. Half-inch diameter spoons can be mounted on the F-G model when it is used to cultivate greens.

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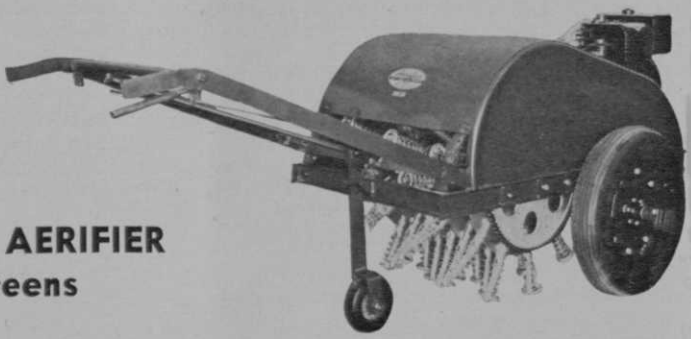
G-L AERIFIER

The G-L Aerifier is self-powered. This compact, easy-to-handle machine is convenient for use on limited areas, such as greens and tees. 2½ h.p. engine provides plenty of power for use on slopes. The G-L Aerifier cultivates a 20" swath. Reel is equipped with 60 spoons. ¾" or ½" diameter spoons may be used on the G-L model. Cultivation depth is adjustable.



G-L model AERIFIER for greens