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THE BRITISH GOLF

GREENKEEPER

HON. EDITOR: F. W. HAWTREE



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APRIL/MAY 1971

APRIL/MAY

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TEE SHOTS



by the Editor

Sir John Borthwick has received planning permission for a proposal for two full-size golf courses, one private and one public, together with a pitch-and-putt course on his Fox Hills estate at Langcross, near Chobham Common in Surrey.

* * * *

Eltham Warren Golf Club in Kent is threatened by the line of Ringway 2 round London. Stan Barrow, its professional, has found 207 acres not far from Eltham and has already persuaded 22 members to back the scheme with £1,000 each. One of them even promised £10,000 and the bank manager is prepared to lend another £50,000.

* * * *

The Burgh of St. Andrews has more than the normal local authority worries if the Wheatley recommendations for the reorganisation of Local Government come into operation in 1975. Control of the Links could pass entirely into the hands of the new District Authority which would have to consider its full resident population as well as the people of St. Andrews.

* * * *

It now seems certain that Immingham will get its own golf course. Grimsby Rural District Council has agreed to start negotiations to lease 60 acres for nine holes and to make available a further 70 acres in the future for the second nine. The Council has set aside £40,000 to buy the land and will rent it to the North East Lincolnshire Development Association at a rent big enough to cover the loan charges.

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QUESTIONS FROM THE FLOOR

By LEE RECORD

Mid-Continent Director USGA—Green Section

Q: *With rising labour costs, omission of daily maintenance practices has become a serious problem, especially with sand trap maintenance. What is the best particle size sand to use in sand traps or should we change to grass bunkers?*

A: Selecting the sand which is to comprise the bunker is of utmost importance. There are uniform systems of classification which can be used as a guide for sand selection. The National Bureau of Standards (U.S. No.) and American Standard for Testing Materials (A.S.T.M.) are two systems of classification. The classification systems are based on particle size.

The best particle size for sand traps is a very coarse sand (1 mm. in size). From an economic standpoint it may be quite costly to obtain sand this uniform size because of the special screening that would undoubtedly be required. Particle size may easily be reached in some localities, however, individual grains have to be examined closely. Rounded grains will leave the sand too loose and golf balls will be buried too deeply. It is preferred that angular grains be used rather than rounded ones.

Particle size too, affects the speed of play. Any sand exploded on a green over 1 mm. may result in players picking up each individual grain. Mowing equipment may easily be dulled or knocked out of adjustment from large particle size.

Sand in traps cannot be hard to handicap the golfer who already is in a hazard and is being penalised. Normally, a golfer should have an option of playing a "clean" shot, picking the ball clean or to "explode". Depending upon the banks of a bunker, an explosion shot is the normal shot used. Sand that is too hard prevents this type of shot. A

normal sand wedge has a flange at its base; this flange is thick and it must have soft sand to execute the explosion shot. A wedge being used on hard sand bounces off the sand and all ball control is lost.

The condition of traps around greens should consist of a soft, coarse, uniformly raked sand. The depth of sand in these traps should be from four to six inches.

Depending upon particle size of sand, it will take several months up to a year for sand to settle properly. A uniform, coarse sand of the 1 mm. particle size will take several months, while silica sand, a by-product of the glass industry, will take a year or so.

Sand should offer a hazard. The ball should bury up to one-half its depth or less. It should not sit up on top to provide a clean shot. The sand bunker should be a fair hazard; sand should contribute, not minimize the hazard.

Should the decision be to convert to grass bunkers, grass would ease maintenance time required above that of sand. It might also speed up play, as footprints or steps would not have to be retraced or raked. Traffic patterns would not necessarily be worn around greens as they presently are. Grass, however, would not be as attractive as sand. Sand provides a visual aid for the golfer to the target area. A normal height of cut for grass bunkers would be between two and four inches.

Questions that will face many club officials and course superintendents will be either continuing to meet the high cost of daily sand bunker maintenance or of gradually eliminating unnecessary sand bunkers and establishing grass bunkers in their place.

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18 HOLES WITH HAWTREE

No. 15 — Transformation at St Andrews

by FRED HAWTREE

But not the St Andrews where the American visitor is supposed to have said, "Really a very good course for such a small town!" We are discussing San Andres de Llavaneras, a tiny nine holes on the coast about 20 miles north of Barcelona. The club started in the twenties and Peter Gannon, an English amateur who designed some golf courses abroad in the twenties, helped to lay it out. He did not have very much help from the ground. There were only 30-odd acres on the side of a steep hill and they produced about 2,500 yards with two holes crossing and the player in mortal danger throughout the round.

In 1967, while involved in the new course at Pals, further to the north of the Costa Brava (the Spanish Open Amateur Championship was held there last September), I looked in at Llavaneras hoping to see what grass they used. But the situation was far from clear.

Then in February 1968, a telegram came, "Would I meet Sênor Villalonga at a hotel in London?" We met and he unfolded a plan. It could only be Llavaneras. Honesty obliged me to say that fundamental improvement was out of the question here on a course in play but being younger in those days and brightening at a mention of extra land, I arranged a visit. Unfortunately, it had to be on a Sunday. With virtually no rough, and players everywhere, an inspection of the layout was perilous and the extra land was not much help.

One piece was like the dome of St Pauls and detached. The other was a 3-acre triangle alongside the 8th which already received a good share of golf balls sliced off the side of the hill at that hole or hooked from the 7th which occupied roughly the same area.

I took my plans to the clubhouse but the accommodation emphasised the social rather than the administrative side of club life and, like the course, offered no retreat for the golf architect. As a result, every member became in-

involved in designing the alterations. Of these, the most popular was a par-5 which ran from one end of the course to the other and looked like being the longest hole in Catalonia.

After several aperitivos, lunch did nothing to relieve a growing somnolence induced by heat, travel, repetitive discussions in a foreign tongue and the dry white wine of nearby Alella. A Committee Meeting was arranged for the evening and it was clearly undesirable to fall asleep while that was going on. I, therefore, made a further inspection of the layout, this time seeking a quiet corner for a siesta. There was still no such place. Every inch of the course was in play. But a vacant lot behind the clubhouse was big enough to provide a quick ziz out of sight. One does not approve of going to sleep on the job but sometimes there is no alternative.

Committee Meetings in Spain are not based on an agenda (and I regret to note an increasing tendency towards the resulting general discussion in this country). But the central topic was clear and the proposals even clearer after the unofficial run-through in the morning. I explained that four changes would enable the 2nd hole to play behind the 1st green instead of across the approach and also allow the 7th and 8th to have separate fairways. It would even enable the 9th green to be moved as the clubhouse extensions planned looked like finishing in its left-hand wing bunker.

Sênor Bernades, the President, turned to Sênor Villalonga. "Carta blanca" he said, which I took to be some kind of document. Villalonga left the room and we continued to discuss details of the layout.

Three-quarters of an hour later he returned, rather glassy-eyed I thought, and sat down. "I've bought it" he said. He had visited the proprietor of the triangle by the 8th, taken a few glasses, agreed the price for the land,

(continued on page 8.

The cost cutter



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(continued from page 6)

arranged terms of payment, so much down—so much over three years and clinched the deal. This I felt was the way to move. A typewriter was then brought in, a solicitor started to dictate and the formal papers were ready by 9 p.m.

No work was to be done until competitions finished at the end of September. But in July, there was a telephone call. "We have decided to close the course during alterations. You can now do what you like." These instructions are so rare that I took them literally and prepared plans, profiles and sections for recontouring every hole to remove freakish slopes. This involved cutting 16 feet deep at some points.

On the 1st October I went out, set out the pegs and offered to return when they started work. On the 14th October, another telegram. "Please come on 21st". This was in line with Llavaneras traditions. Three weeks from setting out to starting work is very reasonable. In the event, they were roughly a quarter of the way through the bulk excavations and top-soil had been stripped from most of the course and all was exactly in accordance with the plans. This is not a common occurrence on golf courses. But *Sênor Fradera*, a leading Committee Member, had engaged a "*paregador*" who is rather better than a clerk of works.

The soil has a beautiful texture from decomposed granite and large reserves appeared at a depth free of weed seed. These were suitably distributed and planting started in December. A certain *Sênor Mas* has large nurseries of an

Agrostic *Stolonifera* strain at Llavaneras. Stolons were spread liberally over the ground and then rolled with vertical discs which pushed them into the surface. In January 1969, some of the stolons already had an inch or more of root and by April, all was green.

The Members meanwhile had been distributed round neighbouring courses—San Cugat, Pals, Costa Brava and El Prat—but they reassembled at Christmas to see how the works were progressing. A route was signposted all round the course and they were organised into foursomes, each in a car, and were sent off from the first tee at intervals by the starter to drive the nine holes.

February to April is a good season for grass growth in that climate but the opening was delayed until the 1st July. By this time there was a uniform turf everywhere with no weed and no rogue grasses. A reservoir had been made for full watering, a new car park had been squeezed out of an odd corner, full size palm and pine trees had been planted at strategic points, and the size of the clubhouse had been trebled with putting green, new terraces and approach—a busy nine months.

At first they thought the new course was too easy. But when the memories of the old course had faded, the problems of golf itself took charge and in a recent professional competition, there were only two rounds one below par.

I have tried to think why a lot of courses in Britain do not undertake a transformation of this sort. It is more difficult in a colder country with congested courses but the real answer is probably more simple. Money!

Selkirk Golf Club's plans to extend their nine holes to 18 have met local opposition. Nearly 1,000 people have signed a petition opposing the plan which takes in part of a local beauty spot.

* * * *

Aberdeen is looking ahead to an expansion of golf facilities. It already has three 18-hole courses and is planning a new 18 and two new nine's at Hazlehead and Balnagask.

* * * *

Kenilworth Golf Club has been lucky in proposals for a new by-pass road. The plans remove exactly 34 square yards in one corner of the course.

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TRADE NEWS

Elvin Pennants announce that their 1971 brochure is now available on application to Elvin Pennants, 32 Savernake Road, Melksham, Wilts.

VEB Landscape Reclamation Limited, well known as early pioneers of the hydraulic seeding technique in the UK, announce that the arrangement whereby for the past three years they have carried out all hydraulic seeding work for Scottish Land (Contracts) Limited in Scotland and the north of England has now ceased.

Enquiries for this type of work in those areas mentioned should now be addressed to the London office of VEB Landscape Reclamation Limited at 230 Tottenham Court Road, London W1P 0BR.

* * * *

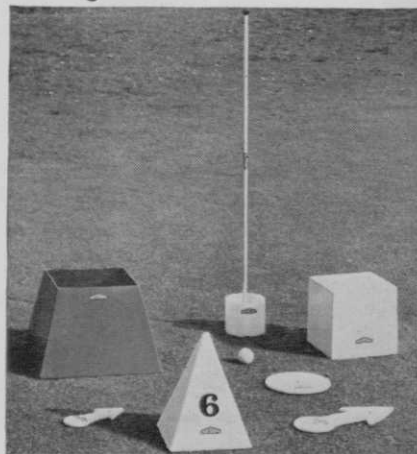
TED REILLY, Ransomes resident representative for North America, has had the honour of being invited by the Royal Canadian Golf Association, sponsors of the International Turf Grass Conference, to give a paper entitled "Past and Future Trends in Grass Maintenance Equipment". Held in Montreal during March, the Conference was attended by leading green superintendents and golf club secretaries from Canada and the U.S.A.

* * * *

Ted Reilly has had a wide experience in grass machinery and grass maintenance equipment both in the United Kingdom and Eire, prior to his recent appointment to North America.

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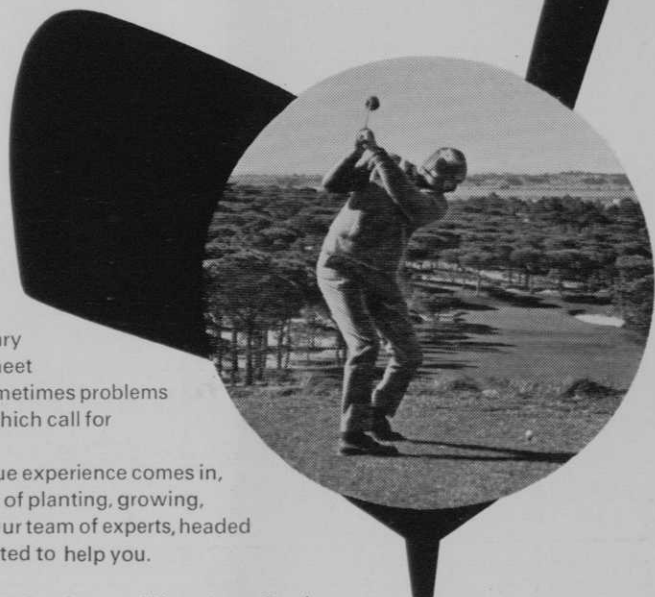
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NOTICE OF MEETING

NOTICE is hereby given that an **EXTRAORDINARY GENERAL MEETING** will be held at

The English Speaking Union,
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Berkeley Square,
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on Saturday, 8th May 1971 at 12 noon.

BUSINESS — To consider and vote on a proposition from the Executive Committee that Membership Subscriptions should be increased as from the 1st May 1971 to:

Class A membership	£2.00
Class B membership	1.50
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WAGES SCALE RECOMMENDATION

At the Executive Meeting on 27th March 1971, the Committee recommended an increase on their 1970 figures, and suggest they should now read:

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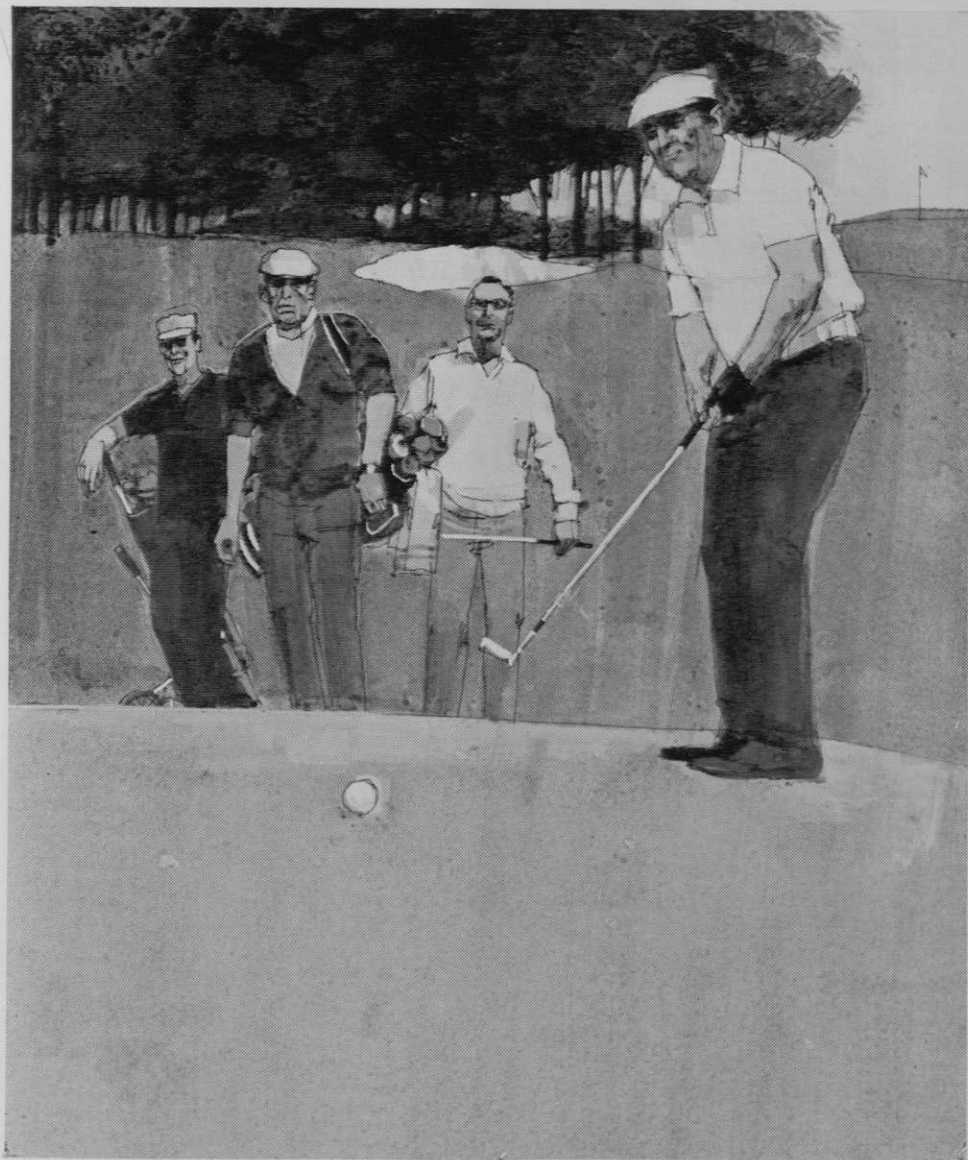
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A QUESTION OF FERTILISERS

By W. N. S. BISSET,
Advisory Officer, Sports Turf Research Institute

As the season has arrived when most of the outdoor maintenance activities on a golf course have commenced, most clubs will have applied their fertiliser. The bills for these materials and other items will have been received and almost invariably will show some increase on the previous year. This usually gives rise to queries by committee men on the necessity for the various materials and ways to keep expenditure to a minimum are examined.

Why Fertiliser?

Of all the factors influencing growth, the nutrient status of the soil is one which can be partially affected by the greenkeeper. However, the extent to which fertilisers improve gross growth is not only dependent on the quantity and quality applied but also on the effects of the other inter-related factors, e.g. light, temperature, moisture and air. Lime is not a fertiliser but is sometimes required to correct over-acidity which restricts growth and fertiliser availability.

To obtain the optimum grass growth, providing that all other factors are favourable, a wide range of mineral elements are required. Most soils, however, naturally contain sufficient minor elements to grow satisfactorily and in general only the major nutrients require replacing, i.e. Nitrogen (N), Phosphate (P) and Potash (K).

Different soils have different levels of natural resources which the bacteria, etc. convert to available plant foods.

For plants to take up the N, P and K these nutrients have to be in a soluble state and, therefore, are liable to leaching by rainwater and loss into the drains. This point is illustrated by a number of reports of stimulated weed growth blocking rivers as a result of leached fertilisers from agricultural land. The naturally produced elements are, of course, subject to the same losses as applied fertilisers. Artificial watering can also increase the losses by this method.

Once the plants absorb the nutrients they are used to build up plant tissue and it can be seen from this that on golf greens and tees where the grass clippings are removed the nutrients are also removed. A further loss is now created.

Fertilisers are, therefore, required to maintain the balance of nutrient levels so that optimum grass growth is obtained. On a golf green higher levels of fertiliser treatment are required because (a) wear is more intensive and quicker recovery is necessary, (b) clippings are usually removed and (c) artificial watering increases leaching.

On a golf tee fertiliser treatment should only be slightly less intensive than on a green as quick recovery from wear damage is necessary to maintain satisfactory playing conditions. Circumstances on a fairway are different as clippings are invariably returned thus creating a cycle of nutrients. However, occasional fertilising may be necessary to make up losses due to other causes.

What Fertiliser?

Once it has been decided that fertiliser is necessary the type of fertiliser to use is the next consideration. Different materials have been shown in experiments to have different effects on turf. The three major nutrient, N, P and K, are required annually by the grass plant. The form in which these elements are applied is important. Experiments have shown that alkaline N fertilisers such as nitrate of soda should be avoided as they lead to a turf which is wormy and weedy. Organic N fertilisers have a similar effect if used alone but have advantages which merit their inclusion in mixtures — they are slower acting and assist drought resistance.

The acidic N fertilisers should, therefore, be used and the most convenient is sulphate of ammonia with dried blood or hoof and horn forming the organic content.

(continued on page 16)

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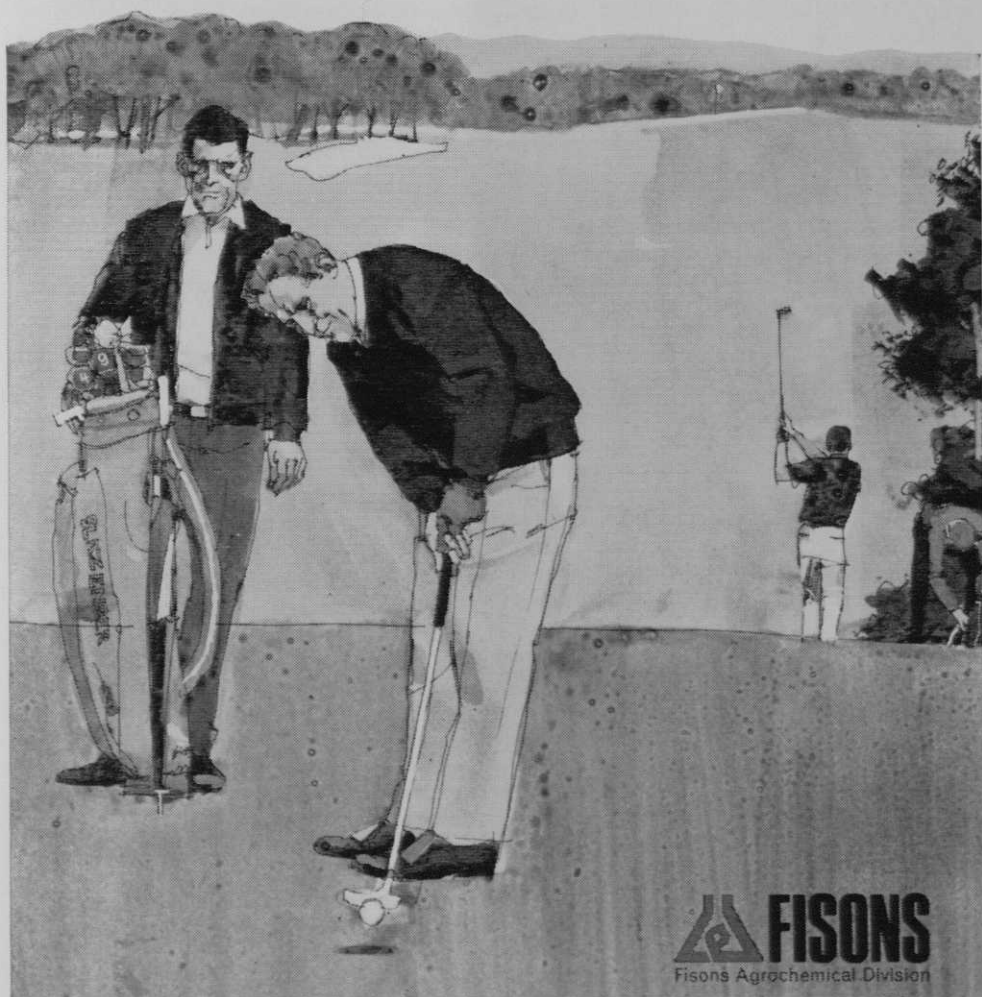
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Fisons Ltd., Recreational and Industrial Dept., Papermill Lane, Bramford, Nr. Ipswich.

(continued from page 14)

To apply P, superphosphate is prominent as the most suitable, with bone meal providing the organic content. Basic slag provides phosphate but also contains lime and will lead to weed and worm invasion if used regularly.

To apply potash, sulphate of potash is the most suitable material.

What Form of Fertiliser?

To apply fertiliser to the fine turf on greens a powdered formulation is to be preferred as there is no risk of the localised scorch which is often obtained with granular materials. On tees either a powder or granular may be used according to preference. The ease with which granular fertilisers are handled makes these materials most suitable for application to the much larger fairway areas.

Liquid fertilisers are often suggested but they have decided limitations. The kind of fertiliser which can be used is restricted by solubility difficulties and there are problems in application. Because of the quantity of liquid involved there is a risk of scorch when applied by a sprayer and because even distribution is required application by a sprinkler is not recommended.

How is Fertiliser Applied?

The methods which are used to apply fertilisers are varied involving hand or machine application. The person or persons whose job it is to apply the material should obviously be competent. Damage by uneven fertiliser distribution is not only harmful to the sward itself where excess can cause scorching but also to the general appearance where areas may be missed. When dealing with powdered materials it is, of course, essential to bulk the actual fertiliser with a suitable dry carrier, e.g. screened sandy compost to obtain an even spread. This applied whether the fertilisers are applied by hand or machine.

If a machine is employed it is important to ensure that calibration is carried out prior to each treatment so that no more (or less) than the required amount of fertiliser is applied. It is argued, and justifiably so, that a skilled man spreading fertiliser by hand is still one of the best methods of applying fertiliser.

When Fertiliser?

In the spring it is important to select the correct time of application and this can be done accurately using local knowledge of weather etc. Often a "false spring" occurs early in the year only to be followed by a sudden cold spell. To obtain full benefit from fertilisers in the spring the grass should be starting to grow (seen as greening up of rough or hedgerows, etc.) and the fertilisers will then boost the natural growth.

Further fertilisers are generally required during the season and should be applied when growth from the previous dressings is beginning to die down, the object being to maintain even growth throughout the season. The fixture card should be borne in mind so disturbance of play is minimised.

Still and showery weather is best suited to the application of either powder or granular fertilisers but the lack of wind is not so critical with the granular types. Artificial watering removes some of the doubts regarding when to fertilise but excess water can lead to uneven distribution.

Where Fertiliser?

As stated previously fertilisers are required regularly on greens, surrounds and approaches, tees and, as often as necessary, on fairways. Selective fertilising of weaker areas of finer turf is not generally recommended but on fairways more frequent treatment can be carried out on weaker parts.

In organising the fertiliser treatment on one's particular course, a soil analysis should occasionally be carried out as a check; one of the services provided to member clubs by the Research Station. Poor results can be obtained by using too little fertiliser or the wrong material, just as too much fertiliser can create an amount of top growth far in excess of requirements and in the latter case there is obviously room to prune the budget.

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PLAYERKILL on Frosty Greens

TO PLAY OR NOT TO PLAY . . . WHOSE DECISION?

By PAUL M. ALEXANDER, Ph.D. GCSAA Director of Education

Like a slap in the face, the sign on No. 1 tee coldly states, "Golf Course Closed Because of Frost."

The overworked, harassed green chairman sighs resignedly and says, "Boy! How will I explain *this* to the Saturday morning boys?"

He turns and enters the pro shop. Before getting half way through, the golf professional halts him with a half-hearted, "Good morning, Mr ———".

After a pause, he asks, "Say, do you think we can get the superintendent to reconsider and open the course? We've already had to close four Saturdays this year because of rain and this sure bites into my sales."

Shaking his head, the green chairman heads for the locker room again, only to be stopped once more. The first four-some of the "Saturday morning dew-busters" group has recently arrived and they look pretty steamed up!

"Why on earth should the superintendent close the course because of a little frost. I pay dues all year 'round and I resent coming here and being told that I can't play . . . besides, Saturday morning is the only time I can get out for golf."

"Look, there are only four of us and we certainly can't cause any damage. How about letting us tee it up?"

Unaware of turf threat

Does all of this sound too familiar? It certainly should — particularly for those courses located in areas where fall and spring frosts are common occurrences. And it is only natural for people to react in this manner. Why shouldn't they? Their reactions stem from the fact that they, unlike the superintendent, do not know *why* traffic on frosted turf (especially greens) presents a threat to the continued health, vigour and playability of that turf.

Expose them to facts

This is not to say that we should try to make every green chairman, golf professional, club manager or golfer an expert agronomist. Far from it. On the

other hand, it actually behooves us to make sure that they are exposed to certain facts about "playerkill" . . . which is the net result of permitting play on frosted or frozen turf.

An example of how frost can affect major tournaments took place recently during the Del E. Webb Pro-Am in Nevada. An early morning frost delayed the starting of the field, resulting in selection of the winning team on the basis of 27 holes instead of two full rounds.

The total number of foot imprints is not the basic reason for closing a course (although this is certainly a consideration); rather, the superintendent is concerned about the damage done to the individual leaf blades within each imprint. If conditions are such that individual cells within the leaves contain ice crystals, it is almost certain that these cells will be ruptured when trod upon. When enough cells are ruptured, the leaf blade will die or, at best, be severely injured.

Playerkill is reflected in a slight depression of the turf which produces the much-hated "bouncing ball" type of putt. Worse yet, it becomes practically impossible to maintain a true-line putt—regardless of how well the ball is stroked. These are just two of the *short-term* undesirable effects of playerkill on frosted or frozen turf.

Long-term effects

More serious—and of importance to all persons interested in the golf course—are the long-term effects of playerkill; those which persist until weather conditions are such that vigorous turf growth resumes, and the damage heals over. A few words of caution are really necessary at this point—these long-term effects can occur just as easily on overseeded bermudagrass greens as they can on bentgrass greens.

Temperature requirements

To the superintendent, the reasons are obvious; if playerkill occurs relatively

late in the growing season when soil temperatures are low, the chances of re-seeding or renovation procedures being successful will be very poor. True, the grasses used for overseeding (or re-seeding) purposes are of the "cool season" types, but they, like all living organisms, have definite temperature requirements which must be met in order for them to germinate, grow and mature.

Playerkill is not to be taken lightly by any green chairman, golf professional, club manager or golf course superintendent. Without true putting surfaces and near-flawless turf that all golfers seem to demand, the over-all operation of the golf club is bound to suffer.

Poor turf results

Simply stated, poor quality turf results in fewer players, which, in turn, leads to lower sales potential for the golf professional, reduced food and beverage sales in the clubhouse and increased headaches for the green chairman.

The need for closing a frosted or frozen course boils down to a clear understanding of all factors involved. Once these factors are placed in the proper perspective it becomes obvious that the superintendent, with his agronomic knowledge and expertise, is the one club representative who should bear the responsibility and authority for such a decision.

Notify club representatives

In addition, it should also be the superintendent's responsibility to ensure that other club representatives are notified immediately as to his decision so that the golfing membership can be informed. Finally, the superintendent must watch the course conditions very carefully so that he can reopen the course as soon as weather conditions permit.

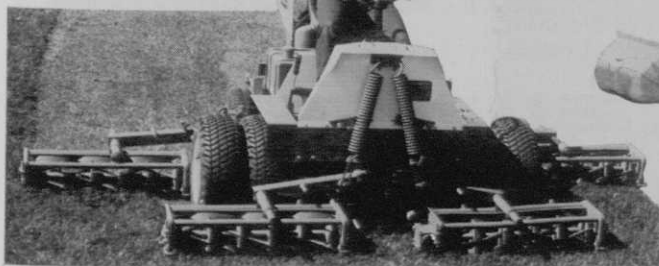
How about it? Is the price paid for one round of golf on frosted or frozen greens worth all the potential trouble mentioned above?

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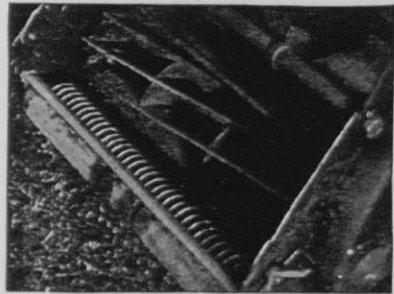
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MAY	4th	Midland Section Spring Tournament.
	4th	Welsh Section Spring Tournament.
	6th	Southern Section Spring Tournament.
	11th	North-West Section Spring Tournament.
	26th	Southern Section A.G.M.
JUNE	24th	President's Team v Midland Section Match.

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News



from the Sections

NORTH-EAST

By G. Jeffries

Chairman:
J. SIMPSON

Hon. Secretary:
55 Brackenfield Road,
Framwell Gate Moor, Durham.

In Memoriam

It is with deep regret that I have to inform members of the death of J. L. Lowery, for many years head greenkeeper of Ravensworth Golf Club. As many members will know, Les had to retire before his time owing to ill health. At our golf meetings he did a wonderful job in looking after score cards, and all the money involved with meals and sweeps. This man was in real pain with his complaint, sometimes at these Tournaments, but would keep it from us.

Les was a wonderful member, he took a keen interest in the running of the North East Section, nothing was too much for him to do, and I personally will miss him as a friend as a man to turn to when in need of advice, as will many other members of the section.

On behalf of all the members of the North East Section, I would like to extend our deepest sympathy to Mrs Lowery and relations, in their great loss.

Spring Competition

In case members did not receive the February Journal owing to the past postal strike, as I did not enter the venue of the Spring Competition in this journal, it will take place at Durham City Golf Club, on Thursday, 22nd April 1971. This will be an 18 hole event, starting time around 1 p.m. I would like to see as many members as possible come along, thank you.

NORTHERN

By J. Parker

Chairman:
A. ROBERTSHAW

Hon. Secretary:
8 Goit Stock Terr., Harden,
Bingley, Yorks.

Autumn Tournament

The Annual Autumn Tournament of the Section will be played over the course of the Oakdale Golf Club, Harrogate, on Thursday, 23rd September, by courtesy of the Club Committee.

President's Prize

Arrangements have been made for this event to take place on Monday, 5th July. The venue will be the Alwoodley Golf Club, Leeds.

Appointments

Mr George Mason, one of our Committee members, formerly head greenkeeper at Knaresborough Golf Club, has taken up a similar appointment at the Redcar Golf Club.

Mr Leslie Beetham has taken up an appointment in Corfu, moving from Lytham St. Annes, where he was head greenkeeper.

Meetings

Owing to thick fog and members being unable to get to Horsforth Golf Club, the January meeting had to be called off.

The February and March meetings were cancelled because, due to the postal strike, members were unable to be notified.

Mr W. Mountain

I am sure all members will wish to join me in congratulating our President, Bill Mountain, on the 25th Anniversary of the founding of the "Mountains of Morley".

Subscriptions

Members are reminded that the subscriptions for 1971-72 become due on the 1st May, 1971.

SOUTHERN

By F. W. Ford

Chairman:
C. A. MOORE
(Stanmore)

Hon. Secretary:
68 Salcombe Gardens
Mill Hill, N.W.7
Tel: 01-959 2847

March Lecture

Approximately 50 members attended the lecture on automatic sprinklers on Wednesday, 3rd March. The speaker was Mr Barnes from Camerons Irrigation Co. Ltd., and aided by some sample pop ups and fittings and an expert knowledge of the subject, he gave a very interesting talk.

The demonstration panel was particularly interesting, and apart from controlling water for as little as one second onwards, a quick

switch to each green in the mornings and the dew is removed without caning or switching. This method is common practice in the States, the speaker said, and by at least one member present.

Mr Barnes acquainted us with some facts and points of interest. Advisable bore for mains pipe for pop ups, two-three inches. The longer the run the larger the bore to offset friction loss. Larger bore pipes can be fitted to one inch meters.

To produce the equivalent of a half inch of rain a small sprinkler takes one hour ten minutes per day, large sprinkler, 30 minutes and pop ups 10 minutes per day. A telephone system via the salinoid wire could be fitted for as little as £100 extra.

Question time was a lively affair and several members were against pop ups because of increasement of thatch and the disruption of existing drains during P.U. pipe laying. The meeting closed with a vote of thanks to Mr Barnes from our Chairman who also apologised for the absence of our President, Mr Jack Wallace-Arthur. We all wish a speedy recovery to Mrs J. Wallace-Arthur. Our thoughts and best wishes also go to Frank Brittin in the hope that he will soon be fit and well again.

Spring Tournament

The Annual Spring Tournament will be held at the Hadley Golf Club on THURSDAY, 6th MAY, and will be a 36 hole Medal Competition. Members must be up to date with their subscriptions to enter and should write in to me stating NAME, CLUB and LOWEST HANDICAP. CLOSING DATE, MONDAY, 19th APRIL. Nearest Station COCKFOSTERS, with a two mile bus journey to the club. First Year Competitors will play from scratch. May I remind last year's cup winners to bring back their trophies with them or to make sure they are at Hadley Wood by the 6th May.

New Members

A warm welcome to the following new members: John Shaw (Ransomes), T. F. Foster (Maidenhead), and R. H. Burnham, P. Dearman, and M. J. Mulligan of Hadley Wood.

A.G.M.

The Annual General Meeting will take place at the Stirling Castle on Wednesday, 26th May at 6.30 p.m. All members welcome.

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Trip to Fisons

The trip to Fisons will take place on Wednesday, 21st April. The meeting place is Charing Cross Underground Station on the Embankment side at 8 a.m.

Autumn Tournament

A note for your diaries, the Autumn Tournament has been arranged for Wednesday, 8th September, at Walton Heath.

WELSH

By S. A. Tucker

Chairman:
M. GEDDES,
23 Fenton Place,
Porthcawl, Glamorgan.

Hon. Secretary:
36 Clase Road,
Morriston,
Swansea, Glam.

Spring Meeting

Our Spring Meeting will be held at the St. Mellons Golf Club, St. Mellons, nr. Cardiff, on Tuesday, 4th May 1971. Will, and I mean *will*, all members intending to attend *please* let me have their entry by the 25th April so that I can make sure that all are catered for. Thanking you.

A.G.M.

I hope to have the dates for the A.G.M. and the Autumn Meeting in my next notes.

NORTH-WEST

By H. M. Walsh

Chairman:
T. BRENNAN.

Hon. Secretary:
Horrobin Cottage,
Old Links Golf Club,
Montserrat, Bolton, Lancs.

Lectures

Our thanks are due to Mr McCogan of Flymo Institutional Division, Mr Mitchell and Mr Harrison of Cheshire Light Tractors for the very interesting and entertaining talk and films on the Flymo and Toro range of grass cutting machines which appertain to green-keeping. Our thanks also for the refreshments provided. Thank you gentlemen once again.

Spring Tournament

The Spring Tournament will take place as stated in previous journals, at the Romilly Golf Club, Cheshire, on Tuesday, 11th May 1971. Will all members who intend to take part please inform me at the earliest moment so that I can complete catering arrangements. It will be a 27-hole event—nine in the morning and 18 in the afternoon. A visitors competition of 18 holes will be run in the after-

noon—one visitor per member. Tee off 9.15 a.m. The A.G.M. will be held in the evening after the evening meal. Please let us have a good attendance.

In Memorium

It is with great regret that I have to inform members of the tragic death of one of our younger members of the section, P. K. Carless of Denton Golf Club, who was killed in a motor cycling accident. Owing to the postal strike I have only the bare facts available and these I owe to Mr O. P. Jones of Bramhall. On behalf of all members I would like to extend to his parents our deepest sympathy in their great loss.

New Members

We welcome to the section the following new member and hope his association with the section will be a long and happy one: L. Scott of Manchester Golf Club — home address Hopwood Cottage, Middleton, Manchester.

MIDLAND

Chairman:
G. HART
(Gay Hill)

By R. Goodwin
Hon. Secretary:
4 Burton Old Road,
Streethay, Lichfield,
Staffs.

Spring Tournament

The Annual Spring Tournament will be held at the Whittington Barracks Golf Club on Tuesday, 4th May 1971, by kind permission of the Captain and Committee.

Please let me have all entries at least one week before the Tournament.

Congratulations

I would like to extend the best wishes of all Midland members to Mr Bretherton on the occasion of his marriage on April 5th and hope that future years will bring much happiness to our President and Mrs Bretherton.

Annual Match at Handsworth

The Annual Match versus the President's Team will take place on Thursday evening, June 24th, at the Handsworth Golf Club.

Once again, I hope to see a good turn-out from greenkeepers for this splendid event.

New Appointment

J. E. Twigger has recently been appointed head greenkeeper to the Evesham Golf Club. Our best wishes for a long and successful future.

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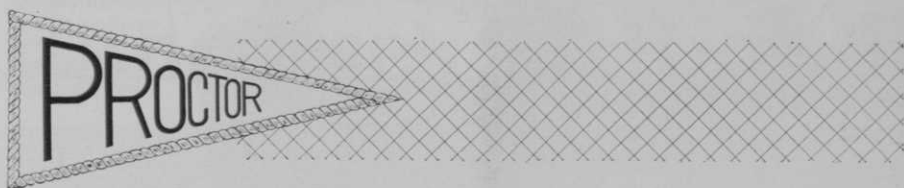
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