

The British Golf Greenkeeper



August 1974

15p

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The British Golf Greenkeeper

HON. EDITOR: F. W. HAWTREE

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Front Cover Picture

The Moor Allerton Golf Club, near Leeds, is now using a Toro Sandpro hydraulically-driven ride-on mechanical rake for care of sand traps. There are 128 bunkers on the 27-hole course—some up to 400 square yards in area. Seven men were previously involved in raking on two days a week. One man can now do the lot in a day with the Sandpro giving his colleagues the opportunity to keep up with other aspects of course management.

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TEE SHOTS

The natural beauty of a golf course such as the site of this year's U.S. Open Championship, Winged Foot Golf Club, Mamaroneck, N.Y., is not achieved by nature alone. In recognition of his exceptional efforts and achievements at Winged Foot, golf course superintendent Ted Horton was awarded a "Citation of Performance" award by his professional association, the Golf Course Superintendents Association of America (GCSAA).

President of the international association, Charles G. Baskin, presented Horton with this distinguished award during the traditional ceremonies at the conclusion of the tournament. Also participating in the presentation were Winged Foot President Edward Schneider and United States Golf Association President Horton Semple.

PAN BUSTING

The benefits of pan-busting to improve drainage and therefore the grass growing, has been admirably demonstrated in an A.D.A.S. experiment on a Cornish farm, according to the Farmers Weekly.

Mr. Jack Bolitho of Commonmoor, Cornwall has a 1,000 acre hill farm with an iron oxide pan under much of it, which stopped water flow through the peat soil.

The A.D.A.S. team sub-soiled 20 acres. Now, while most of the 33,500 acres of moorland carry the usual poor-quality, stunted growth, the treated area has grass 12 inches high.

Three sub-soiled plots, compared with three controls, gave the following grass production.

		lbs. of Dry matter	
		Control 1/ fertilised	Fertilised/ Sub-soiled
68	units N.	145	210
91	" "	180	400
150	" "	450	740

Dr. David Hughes, A.D.A.S. soil scientist, also estimated that resistance to poaching (and golfers cause that just as well as cattle) had increased by 40%.

Gordon West, Head Greenkeeper at the Auckland Golf Club, Middlemore, New Zealand had similar ideas when he inserted five sticks of gelnite in one of his fairways. It was just bad luck that he was next to a hospital instead of Bodmin Moor. But he got the results he wanted and the hospital is still there. He only rattled it.

F. W. Hawtree.

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HON. SECRETARY'S NOTES

**A.G.M. Isle of Purbeck Golf Club,
Studland, Swanage, Dorset.**

NOTICE IS HEREBY GIVEN that the fifty-seventh Annual General Meeting of the British Golf Greenkeepers' Association will be held at the Isle of Purbeck Golf Club, on Monday 30th September 1974 at 2.30 p.m. Notice of resolutions must be sent in writing to the Hon. Secretary TWENTY-ONE DAYS before the date of the meeting. Under Rule 29 proxies may be voted at all general meetings. A Form of Proxy may be obtained from the Hon. Secretary and returned not later than the first post of Wednesday 25th September.

Annual Tournament

The fifty-seventh Annual Tournament will be held at the Isle of Purbeck Golf Club on Monday, Tuesday and Wednesday, 30th September, 1st and 2nd October 1974. Entry Forms appeared in the July Journal.

Programme

Monday 30th September. Morning—18 Holes Stableford. Afternoon—Annual General Meeting 2.30 p.m.

Tuesday 1st October. 36 Hole Medal; News of the World Cup (Scratch). Senior Division (plus to 11) Junior Division (12 to 24); the Jubilee Cup (Team Prize off Handicap); 'The Coming of Age' Cup.

Wednesday 2nd October. Morning 18 Hole Medal; Afternoon—Prize distribution 3 p.m.

Handicaps

Section Secretaries will be asked to verify the handicaps of all competitors from their records before the Tournament. All handicaps must be based on the National Golf Union's handicapping system.

Executive Committee

A Meeting of the Executive Committee will be held at the Isle of Purbeck Golf Club, Studland, Swanage, Dorset on Sunday 29th September 1974 at approximately 5.30 p.m.

Trophies

May I remind all holders of trophies from last year's Tournament who are not taking part this year, to ensure that these are returned to the Isle of Purbeck Golf Club, Swanage, Dorset, before Saturday 28th September, 1974.

The Mommersteeg Seed Company would be pleased to give a talk with slides on modern cultivars of grass seed for golf courses. Interested sections should contact Mrs. Bradbury, Sports Turf Advisor at Mommersteeg International, Station Road, Finedon, Wellingborough, Northants.

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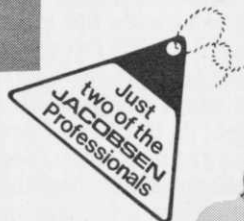
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MAINTENANCE MACHINERY AND SURFACE DRAINAGE

TOM MASCARO

Although not introducing anything new I hope to organise your thinking as managers of turfgrass areas how you can alter conditions to grow better grass by the use of maintenance machinery and cultural practices. The five major factors that affect surface drainage are:—Degree of Grade, the Sub-Surface Drainage, Soil Structure, Soil Texture and Thatch.

Degree of Grade & Sub-Surface Drainage

First it should be clear that the degree of grade, or slope, will have a profound effect upon surface drainage. The greater the degree of grade, the more rapid the run-off of excess water. Therefore it is vital for turfgrass areas that both surface drainage and internal drainage be adequate to remove excess water rapidly. The reason, of course, is that grass roots breathe, just as you and I, and all living things on this planet. Excess water, devoid of oxygen, prevents the grass plant from functioning. Severe damage and death of the plant especially at high temperatures will occur.

Degree of Grade is something you cannot alter very much once it is established and by and large you have to live with what has been done from the very beginning. The same applies to the drainage underneath. The tile drains which were installed, the type of sub-surface which exists under the grass you are growing, once it has been established, generally cannot be

altered very much unless you go to a tremendous amount of expense. So as Greenkeepers and Golf Course Superintendents you have a very small area to work in, and this is that upper layer we are all familiar with. Much can be done here and we will discuss this area under three headings, Soil Structure, Soil Texture and Degree of Thatch.

1. Soil Structure

By structure we mean how the soil is put together, how the particles are arranged. The sand, silt and clay of any soil is arranged in such a way so that it has 50% solid, 25% for air space and 25% for water. Modern irrigation systems supply the water. What we like to see under turf is a soil in good tilth, one which is made up of aggregates. We have spaces for air, water, fertiliser to move down and also to exhaust gases that are produced by the roots. We say that roots don't grow in the soil, they grow in the spaces within the soil and this is what we like to see under turf areas; this is what the farmer likes to have when he plants his crops.

Unfortunately, water is a lubricant and this can compact the soil quite easily. If you take a feather and stroke a wet soil you can seal it off very nicely. When we were children and made mud pies, we didn't make them by pounding the soil, we made them by patting the soil. So water

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and the pudding effect has a profound effect on the soil structure.

It is not so much weight that causes compaction because we do not use massive equipment on turfgrass areas, we use rather light equipment. There is however, some degree of compaction from the equipment, and it certainly should not be discounted. Most of the damage comes from the roll of the wheel, the roll of a person's foot and even raindrops. The golf car in America has certainly created quite a bit of damage to the turf. These mechanical forces, although light in nature, repeated often enough, will seal the soil quite effectively, and even sandy soils can become sealed at the surface without too much trouble.

Soils are very hard to compact when they are saturated. Grasses mostly grow at what we call the field capacity; when the soil becomes saturated growth drops off quite rapidly. You cannot compact a saturated soil, because you cannot compress water, but you can puddle it and this is where most of your problems come from in these areas.

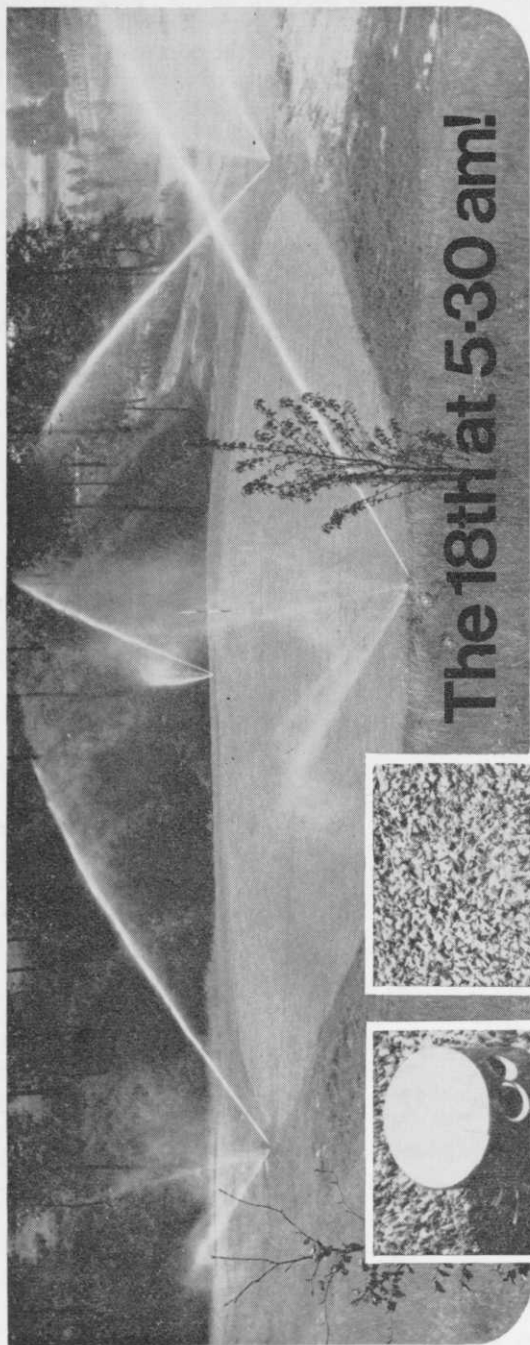
So this matter of drainage becomes very important. There is one saying that I think we all have when we begin construction on a golf course, there are only three things to remember, and they are:—"Drainage, Drainage and Drainage". Those are the three things because if we cannot get that water off, we are going to have trouble. Any traffic that passes over it will seal the soil off and this is where your problems begin. Roots become shallow and most of this compaction surprisingly enough is up near the surface, it is not down very deep. Granted over a number of years you can transfer this compaction down below, but most of it is up near the surface, and after you have compacted the first inch of soil, it is almost as if you have put a piece of 3/4" plywood on it. You cannot transfer it down very easily, so in most cases

you take a sample. A good sampling tool is 6" deep and 3" wide and will take an undisturbed profile. You can then see where the compaction is, and after thousands of these samples, it is interesting to see what pattern is formed. Fortunately we have good architects, who write good specifications and are very careful, but there are many times when construction is done by the inexperienced, and they can build more problems into it than you can imagine. If machines pass over a soil not in the right condition, a hard pan can be formed below quite easily.

Now the farmer knows that he never ploughs the fields when the soil is too wet, because if he develops slip layer, roots will not penetrate. But roots don't grow in the soil, they grow in the spaces and if these layers are built in down below and are covered with loose soil and seeded, you can be sure this will be a problem area.

People do the same thing. Over a period of one week, the boys in the band of North Western University practised marching on an athletic field and the lines where they had marched remained for a long time until we used some aerating tools. At an international tournament at Merion Golf Club in the Philadelphia area, a mass of people in 3 days did a fine job of really compacting the soil. Golf cars also create compaction. An experiment was conducted in the State of Georgia on Bermuda Grass, which is one of the toughest grasses we have. The question was what size tyre should be used. There was the 650, the 850 and the 950, and we found they were all just about as bad as each other. The other thing was that the 650 sank down and the grass couldn't be mown.

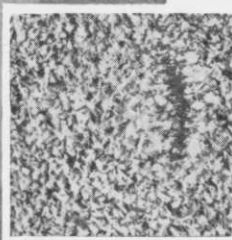
Over a period of time, these things do happen and after compaction is formed, it is sometimes very difficult to regain good soil structure. On the edges of the green we often find



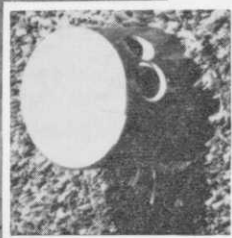
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severe compaction. *Poa Annu*a is the first plant that will come in and replace the grasses, because it is shallow rooted and can live in compacted soil provided you give it enough moisture. The only problem with *Poa Annu*a is that in some parts of the world it dies at the wrong time of year.

Another area where we find severe compaction is at the ends of the fairways where we turn with the tractor. This is not only due to the puddling effect of the wheels but also to the side thrust as the wheel turns, actually grinding against the soil. If you were to see a high speed movie of a wheel going over the turf on a wet soil, you would find that the soil immediately in front of the wheels is actually rolling, very much like a rolling pin rolls dough. It is moving the soil in a circular pattern and destroying the soil structure. These are some of the things you have to worry about and should form part of your management programme.

Erosion is another problem to look out for. Water can carry away a puddled soil into other areas. There was an example on one golf course fairway where water had moved over it for a period of about 6 months. Eroded soil had been brought in by surface drainage. A 3" deposit of clay was left over the good soil. Sometimes tile lines come up to the surface, not because of freezing and thawing but because of erosion. In a period of 25 years pipes buried 18" deep, came to the surface. They had lost 18" of topsoil.

The misuse of water is evident in many areas where there is no drainage. Then people do all sorts of interesting things. The Stadium at Berkeley in California was so wet through lack of drainage they decided to hire a helicopter to come in and fan it and see if they couldn't evaporate the water.

However, you run into these things.

So what do we do about it? Up on the surface where the sealing off is taking place, the obvious answer is to plough it up and start again. If those of us who are charged with maintenance of turfgrass area had our own way, this is what we would do; simply bury all our problems and begin afresh. Unfortunately we cannot do this, so we look for other ways. We know that ploughing is a practice that has gone on through the centuries. In the mists of antiquity man discovered that seeds which fell to the earth took root and grew better if he stirred the earth with a stick. Through the years we have developed better and better sticks with which to stir the earth.

No man would attempt agriculture without the plough; it is the basic tool. With the plough he renews soil structure; the plough simply picks the soil up, turns it over and moves it somewhere else. If you dig a hole, get the soil out and then try and put it back in, you'll never get it all back, because you have renewed the soil structure. The renewed air spaces within the soil allow for the free movement of air, excess water, nutrients and roots. The plough mechanically renews soil structure.

On turfgrass areas we cannot do this. We use aerifying tools which are essentially modified ploughs. Instead of turning over the entire soil in the turfgrass area at one time, these tools turn over a small percentage of the soil. Over a period of time, following a judicious programme of aerification, all of the soil will eventually be turned over and relocated.

When you are cultivating the turf itself, do not attempt to fill the holes, because what you are trying to do is to remove soil, so that the surrounding soil can expand into it. When the job of cultivation has been done well, in two or three weeks' time there is no evidence of the hole. The soil structure has been renewed and more

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The British Golf Greenkeeper

spaces created for roots to grow and for air, water and nutrients to move down through the soil.

2. Soil Texture

Texture, the second major factor, means the amount of sand, silt and clay in any given soil. A soils map of the British Isles looks like a checker board; I am sure that I could come onto any golf course or any sports ground, and from one end to the other find all sorts of variation in between. Nature does not give you a uniform soil throughout an area.

One simple way you can determine the texture of a soil is to get a soil sample and shake it up in a jar; let it settle for about 5 minutes and that is your sand portion. This does not mean the sand you would find in a river bed, but pieces of rock and all those particles which are in the larger range. Shake up the jar again and let it settle down for 24 hours, pour it off and you have your silt and clay separated. It is a very easy thing to do and it gives you a general idea of what you are working with and how to attack it.

Texture and its relationship to water has a bearing on growth. If you had a soil and you were to send it to The Sports Turf Research Institute at Bingley, they would report back that it was a good soil, had all the nutrients, the pH was right and everything else, but it wouldn't necessarily grow grass; it may have no stability and many soils are in this condition. I can illustrate the point in this way. Dr. Aldifer at Pennsylvania State University a number of years ago ran an experiment. He laid out plots of ground and on some he grew grass and some he kept bare. In one year's time he took samples from each plot. He took beakers and filled them with water, placed a copper screen about half way down, and then dropped these two samples in simultaneously.

Within five minutes, the sample that had had no grass growing on it showed some flaking off and then began to disintegrate, whereas the sample that had grass growing on it remained intact. We can see that grass is the plant that gives stability in the soil. This is the plant that helps drainage. Here we are then, growing the very crop that can build soils. All it asks of us is a little bit of help; that help is good management.

Soils are in themselves inert; we've seen pictures of the moon and there is no life there; there is no life on earth if we look at the soil itself. The soils become dynamic in the presence of organic matter. Soils are composed of mineral matter, but when we add organic matter and especially organic matter derived from the grass plant, we make it dynamic. The soil then has stability and will also expand and contract.

If you take a soil that is rich in organic matter derived from grass-roots and wet it, it will expand; if you allow it to dry, it shrinks and contracts. Now no one is going to build a machine to replace this simple property. So the manipulation of water, alternate wetting and drying, will do more good than any machine you could ever buy, expanding and contracting the soil deeper than you would be able to go with a surface tool or sub-surface tool.

In addition to the many textural differences that occur naturally in soils, man sometimes adds to these problems. In his effort to modify a soil with, for example, sand, he does a poor job of incorporating it into the entire soil profile. The result is a layer of pure material which effectively inhibits the movement of roots. If sand is in a vertical pattern water will move down through it, but if it is horizontal there will be a false water table. It has been demonstrated that roots do not grow through sand layers. At the Bellair Country Club



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HORWOOL

in Los Angeles, there is a sand layer about $1\frac{1}{2}$ " down, with absolutely no roots going down through it. One cultivation over that sand layer and lumps appear where the roots have gone right through.

Layering also occurs when top dressing is used without removing thatch accumulation. This partially decayed material forms a strata of unlike matter in the soil profile, and has a profound effect upon the movement of surface water.

When soils are modified to improve texture with materials like sand, humus, peat moss, thorough mixing must be done to incorporate these materials through the entire soil profile. If top dressing is done, care must be taken to remove surface thatch accumulation. Ensure that dressing material makes contact with the soil below. Verticutting is a vital practice in any long range programme of turfgrass management. Prevention of layering will help movement of water to the root zone.

Outside ploughing, or repeated aerification is the best and most practical means of changing soil texture in the upper three to four inches of the soil profile, and still keeps the area in play. Soil cores are lifted out and redistributed over the turf surface.

3. Thatch

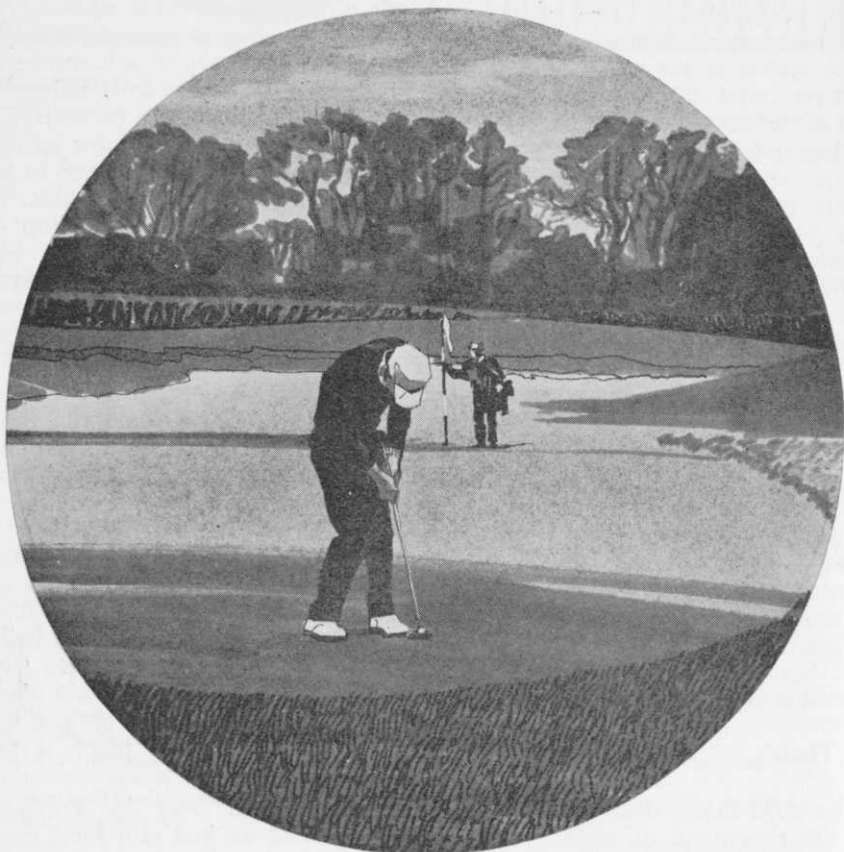
The third factor drastically affecting the movement of surface water is thatch. It's quite possible to grow too much grass. All mowers, whether they use a reel, a sickle bar or a rotary, cut on a horizontal plane. Not all the grass blades stand up to be cut, so every time you mow you only cut about 20% of what's growing, or perhaps a little more. These uncut leaves are called "grain". Grass is the only plant that grows from its base. If we take a leaf on a tree, take some scissors and cut it in half, it will stay like that until it falls off in the

Autumn, but with grass we can cut it and it will keep coming up because it is growing from the base. These uncut leaves will remain in their prostrate form until they die in about 30 days, generally speaking, and they become part of the thatch, part of the build up of the excess crop. As the thatch builds up, because mowers will keep riding over it, it becomes quite dense and is very hard to decompose. We have to do things to it culturally to get it out of the way because it is really a thatch roof. We now have a grass plant that has no desire to go down into the soil. All the water, all the nutrients, will stay at the top; if you get excess water the plant will drown. So we have a basic problem, getting down through the thatch and opening up the soil, and, of course, removing some of this material.

The build up acts like a filter and materials won't pass through it. Nitrogen is easily dissolved and will move through the prostrate layers but lime, potash and other materials that we use, tend to be caught in this filter material and just remain there. The plant now is just on the surface of the ground, so one of your best indications of the grass plant just growing on the surface of the soil is to look out and see how many divots there are. If there are many divots you will know that the grass plant is not anchored in the soil.

An example was in Portland, Oregon, and we had rain for 2 days. It was during the depression, and brown spots appeared. The Superintendent thought he had disease. We went out and looked at it, dug a hole and found pure dust underneath. We came in and he said "My God, during the depression even the water isn't wet!". When thatch gets wet it's hard to dry out; it becomes unplayable, hard to mow, the players don't like it, and footprints show badly. We condemn the manufacturers of mowing equipment when it's no more than a

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mattress we are trying to mow.

Thatch prevents the penetration of surface water to the soil profile. Like thatch on a roof, it can effectively shed water to prevent it from entering the root bed. It has been demonstrated many times that thatch, under the proper conditions, can cause almost 100% run off of natural or applied water.

Thatch, during certain stages of decomposition, develops sponge-like characteristics. Water is held at the turf surface, rendering the area unusable. Conditions are suitable for moss, algae and fungi. When heavily thatched turf surfaces are used while saturated with water, severe surface soil compaction is likely to occur. Excess water, held at the soil surfaces, sets up ideal conditions for puddling. Traffic, (equipment, golf cars or people), can create a great deal of damage in a very short time.

Thatch that holds too much water can effectively form a barrier that impedes the free movement of air. Under cool conditions, this may not be serious. However, when temperatures rise, a number of deleterious effects occur. Water, which can absorb more heat than dry thatch, becomes very hot. This can cause scalding of the plant tissue.

Water, held at the soil surface by thatch can hold accumulated salts and other toxic substances. These chemical compounds, derived from exudated fluids, applied fertilisers, soil salts or leached from the thatch itself,

can, in sufficient concentration cause severe root, stem, leaf burn, or a combination of these.

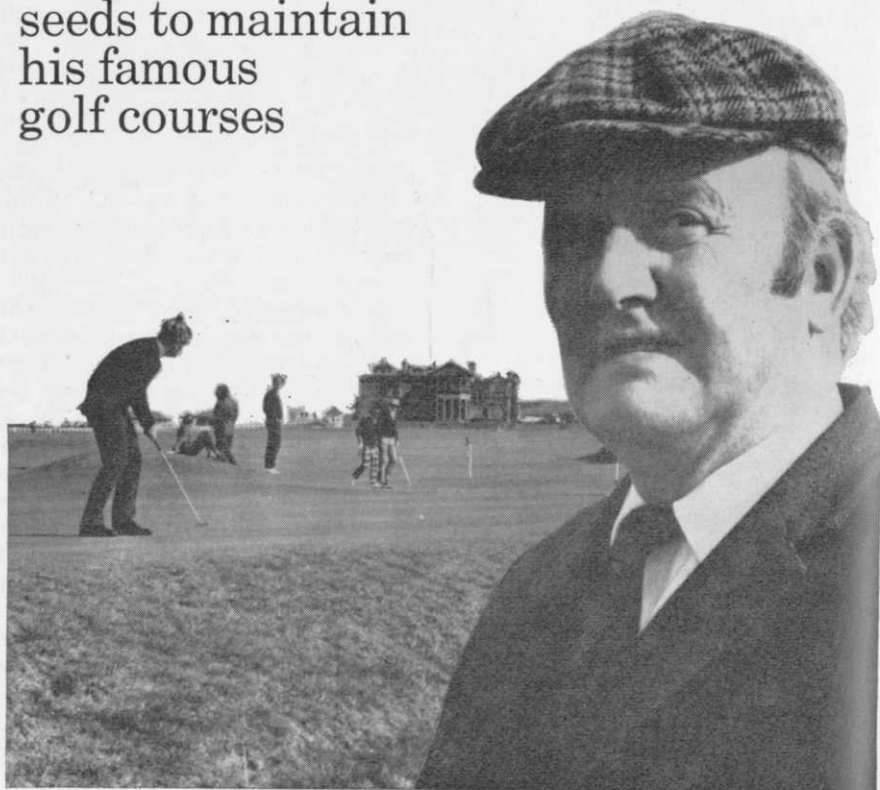
Judicious control of accumulating thatch, therefore, is extremely important when related to surface drainage.

Aerification will help as you are getting some of the soil out and mixing it with the organic matter on the surface. New roots will develop. You need surface working tools all the time, bearing in mind we want the golfer to be as undisturbed as possible. Even mowers have come into play. There are certain times when you can be pretty rough on grass without hurting it. An experiment was run in Florida with the Ransomes machine and we set it right down to ground level to cut the grass and shaved it off. There was a vote taken in the Club to fire the Superintendent, but we went ahead and did 18 fairways and shaved all of them and in about 4 or 5 weeks they elected to reinstate him.

In summary, when dealing with surface drainage, one must keep in mind the inter-relationships of Degree of Grade, Sub-surface Drainage, Soil Structure, Soil Texture, and Thatch. It becomes evident that good planning, followed by a sound Turfgrass Management Programme, is important to the production of good turf. Machinery is available to help us achieve these goals. Turfgrass Machinery, along with good cultural practices can help us produce and maintain the kind of playing surfaces that will please everyone.

THE GREAT LINKS

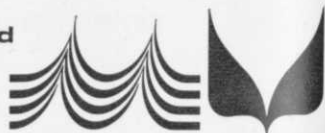
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The British Golf Greenkeeper

MOSS ON SPORT TURFS

by R. L. Morris,
Senior Horticulturist,
Levington Research Station

(Continued from July)

The application rate for Hi-Lite Mosskiller is one ounce per square yard and the physical form has been designed so that the same setting is used on spreaders as with "Greenkeeper 2 in", "Greenkeeper 1 in" and "Combined Turf Fertiliser and Weed-killer". Mosskiller can also be applied accurately through the Cyclone Spreader.

The short-term effect of Hi-Lite Mosskiller is rapid blackening and death to the moss, but unlike conventional lawn sand, its action is much kinder to grasses. Our phytotoxicity experiments have indicated that rate for rate, we have increased the safety margin considerably.

After the use of Hi-Lite Mosskiller a very good dark green colour is achieved and our experiments and trials confirmed by usage on sports turf, show that this is sustained for some 6-8 weeks.

When used for moss control in the period late March—early April, the time most people become conscious of moss invasion, not only will the moss be cleared up, but growth produced as a result of the nitrogen component forms a good base for the summer feeding programme.

The physical advantages of Hi-Lite Mosskiller—lightweight, controlled process of manufacture—all lead to improved application characteristics, particularly through a spreader, with the result that a much nicer product to handle and much safer product to the grass has been produced.

Coupled with aeration, regular light scarifying will control fibre development and prevent the build up of a spongy water retentive surface. The secret of scarifying is little and often. This avoids the stress that the grass is put to if only two mammoth on-slaughts are made, one in spring and one in autumn.

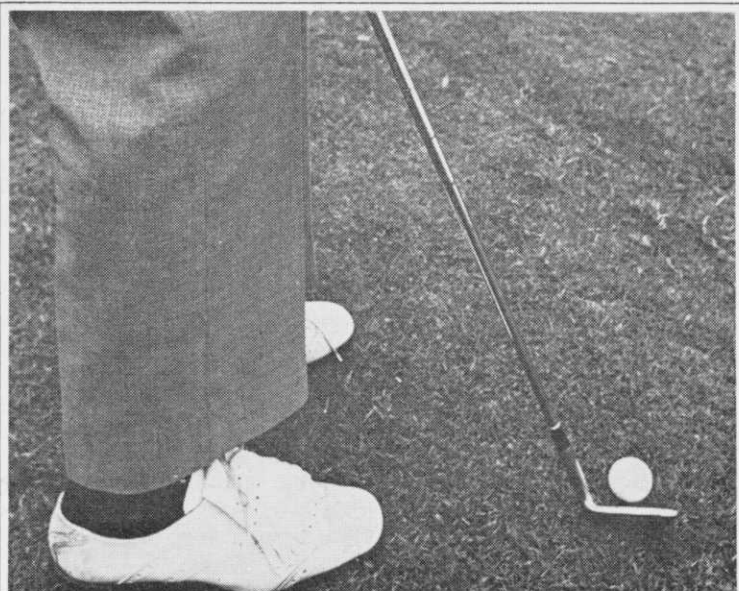
Many chemicals have been used for moss control over the years, but the most successful has been lawn sand, that very effective combination of ferrous sulphate and ammonium sulphate in powder form. Mosses are scorched out by lawn sand, an osmotic effect brought about by these two soluble salts going into solution in the surface water, so these dry formulations work best when applied under moist conditions.

One contributory factor in the success of lawn sand is the fact that nitrogen is supplied by the ammonium sulphate.

When coupled with good management practice, the results from lawn sand are very good. There is one point to watch with lawn sand: chemically it is acid forming. This can be used to advantage if a high pH needs to be lowered, but excessive use of lawn sand under other circumstances can drastically lower pH to an unacceptable level. If this happens biological activity in the upper soil profile is affected, resulting in the build up of hard fibre.

The biggest drawback with lawn sand is its physical form; a duty powder, very dense and unpleasant to work with, leaving a nasty, metallic taste in the mouth. Many groundsmen experience difficulty in applying lawn sand both hand and with spreaders. Packing down in the hopper makes a spreader very hard to push.

The physical problems associated with lawn sand often lead to mistakes in application, particularly with hand application where there is a tendency to spot treat and this leads to over-



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application. Under many conditions this can result in severe burning and the lawn may be seriously damaged.

Damage can also occur when using a spreader—usually faulty use of the on/off control and lack of co-ordination. This happens particularly at the start and finish of runs where quite large patches of damage can be produced. As lawn sand is very free running a quite considerable pile of material will run out if the shut off is not closed when the spreader is stationary.

At Levington we have worked on the problem of moss control over the years and are now able to offer the groundsman the results of our endeavours in the introduction of Hi-Lite Mosskiller. Hi-Lite Mosskiller is a lightweight granular product; yet another of our increasing family of lightweight peat-based speciality fertilisers.

NEWS

J. G. VERLAQUE'S APPOINTMENT TO PIPECRAFT

Pipcraft Limited is delighted to announce the appointment of John G. Verlaque as Sales Director. No stranger to irrigation, Mr. Verlaque represented a major international irrigation company, throughout U.K.—latterly, as Sales Manager, and also had Sales involvement in the E.E.C. countries. Born and educated in East Africa, Mr. Verlaque pursued an agricultural career, with the intention of returning to the family farm in Kenya, and he obtained both National Diplomas in Agriculture and Dairying. The political scene, however, intervened and the commercial world seemed an appropriate challenge. "Irrigation schemes, well designed and installed provide challenge and satisfaction to the designer and the end user".

August



THE INSTITUTE OF GROUNDSMANSHIP

29th annual exhibition

at Mootspur Park
on Sept. 10.11.12

INTERNATIONAL EXHIBITION 74



Acclaimed by all associated with International groundsmanship as the only exhibition that gives you the opportunity of seeing and discussing improved turf culture techniques—new and synthetic playing surfaces for Sports and Leisure Centres—revolutionary machinery for turf aeration and grass cutting on cricket squares and golf courses. Automated irrigation systems, seed, fertilizers, chemical and spraying equipment. All are part of the interest packed Groundsmanship Exhibition held at the University of London Athletics Ground, Mootspur Park, New Malden, Surrey, between 10 a.m. and 6 p.m. on the 10th and 11th September and 10 a.m. and 5 p.m. on 12th September. Direct trains from Waterloo to Mootspur Park Station. Road travel on A3 Portsmouth Road turn off at New Malden Roundabout. The Exhibition is at Mootspur Park by kind permission of the University of London.

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TORO

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SERVICE

The Contract Maintenance Service Scheme was introduced to ensure that owners of Toro equipment receive maximum benefit from investment in high work-rate machinery by continuous trouble-free operation through preventive maintenance and operator product knowledge.

It is based on the belief that the breakdown of well designed quality machines is most often due to causes which can be anticipated, such as—

- * Lack of operator knowledge
- * Incorrect use
- * Insufficient maintenance
- * Bad adjustments
- * Misalignments
- * Lack of lubrication
- * Infrequent attention to filters
- * Dirt in fuel system
- * Bad adjustment of cutters—usually overtight
- * Insufficient or incorrect engine oil
- * Poor engine compression
- * Weak Battery
- * Electrical faults
- * Undetected wear
- * Incorrect tyre pressures.

Any of these situations can cause annoyance and inconveniences and can affect dramatically standards of

performance and running costs in terms of fuel, spare parts and overhauls.

Special Arrangement

A special arrangement is included for subscribers requiring spares, and any urgent orders received before 2 p.m. on weekdays will be forwarded the same day if they can be sent by post.

Facilities for Saturday collection of spare parts from the Watford stores section between 9 a.m. and noon—apart from 8.30 a.m. to 4 p.m. Monday to Friday—is another new advantage.

Provision of a Saturday emergency field service is one of the major benefits for subscribers to the Contract Maintenance Service scheme being operated by Toro (London) Sales and Service this year.

New Benefits Announced

The Saturday Emergency Service applies to calls received before midday on Friday. The service is designed to assist Toro users with genuine emergencies to fulfil important week-end grasscutting obligations.

We have pleasure in announcing
the appointment of

JOHN VERLAQUE

as Technical Director

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The objective of monthly contract maintenance visits by Toro (London) Field Service Engineers is to tackle any problems before they arise.

Operator Knowledge

During each monthly visit, the Toro engineers carry out the following duties:

- ★ Check routine maintenance check lists
- ★ Make monthly adjustments against check lists
- ★ Check types and use of oil
- ★ Test electrical components
- ★ Test engine compression
- ★ Check torque loadings on drive systems and cylinders
- ★ Test and adjust hydraulic system
- ★ Give guidance for increased customer satisfaction and assist with entries in the service history book of the machine.

- ★ Encourage better user facilities if required
- ★ Ensure new operators have the opportunity for comprehensive instruction in use of the equipment.

Although operator knowledge and correct application of Toro equipment is gained at the time of delivery and installation, current rate of staff turnover can often place a new operator in a difficult position.

A further advantage of the scheme is that during a Contract Maintenance visit it may be found that a machine may require attention under the terms of the Toro 12-month guarantee associated with faulty materials or workmanship. Such work can then be carried out and cost of parts and labour are not charged.

Details of the scheme are available from **Toro (London) Sales and Service**, at Watford.

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Special Occasions

- Sept. 1 CARL BRETHERTON
BOWL—Handsworth.
- 6 Southern Section Buffet/
Dance—West Essex G.C.
- 11 Welsh Section, President's
Shield—Pennard G.C.
- 11 Southern Section Autumn
Tournament — Burnham
Beeches Golf Club.
- 18 East Midland Autumn Golf
Tournament — Chilwell
Manor G.C.
- 18 Midland Section Autumn
Tournament—Handsworth
G.C.
- 26 North-East Section Autumn
Tournament 27-hole—Tee
Off 9 a.m.—Tyneside G.C.
- Sept. 30 B.G.G.A. 1974 ANNUAL
- Oct. 1 TOURNAMENT and
& 2 A.G.M.—Isle of Purbeck
Golf Club, Studland, Swan-
age, Dorset.
- 9 Southern Section Secretary's
Match—Stoke Poges G.C.
- 10 North-West Section Au-
tumn Tournament—Priest-
bury G.C.

Southern Section

Chairman:
F. W. FORD
(South Herts.)

Hon. Secretary:
F. W. FORD
68 Salcombe Gardens,
Mill Hill, London, NW7
Tel: 959 2847

A.G.M.

Details of the 1974 A.G.M. held at the Dulwich & Sydenham Hill Golf Club on Wednesday 5th June are as follows:—

The Minutes of the last A.G.M. were read by the Secretary and signed as being correct by David Craig, presiding in the absence of the President. Arising from the Minutes, the Secretary confirmed that the Autumn and Winter Lectures would be held at the Whitbreads Sports & Social Club, in Chiswell Street, E.C.1. The Section and Benevolent Accounts were adopted on the proposal of C. A. Moore and seconded by E. W. Johnson.

Election of Officers

President—

Jack Wallis-Arthur.

Vice Presidents—

D. M. Craig, F. W. Hawtree, C. P. Simpson, J. Field, K. J. Hemingway, F. Brittan, P. A. Marshall, K. Thomas, V. L. Waeland, J. M. Thomas and J. Varney.

Chairman—

F. W. Ford.

Vice Chairman—

C. E. Ryan.

Committee—

D. H. Major, D. S. Gould, W. F. Machin, C. E. Ryan, J. Kirkpatrick, R. Tempest, D. J. Jones, E. W. Johnson, D. G. Heath, H. Brown and M. C. Owen.

Executive Representative—

D. H. Major.

Hon. Sec. & Treasurer—

F. W. Ford.

A.O.B.

It was decided to continue holding the A.G.M. at Golf Clubs with 18 holes in the afternoon. It was also proposed, seconded and carried that there should be no best morning and best afternoon prize in the Spring Tournament 36 hole Medal. The object being to simplify the allocation of prizes under the one prize only rule. 20 members showed interest in David Heath's enquiry into a possible trip to New Orleans in 1975.

The Secretary promised to publish a list of 1975 tournaments and other Section activities.

The 1974 A.G.M. closed with a vote of thanks to David Craig for taking the chair. I now understand that our President is ill in Barts Hospital. Get well soon Jack.

A late May journal and the 5th June clashing with other events, resulted in a poor entry for the afternoon's golf. However, a very enjoyable day was had by everyone, thanks mainly to John Kirkpatrick and Dad. Many thanks Dad and please convey our sincere appreciation for all the friendly hospitality we received from everyone at Dulwich. Thanks also to our friends in the trade, Dave, Phil and Maurice and to Bonzo for taking over the raffle and making a profit of £12.80p. We are grateful to Chipmans for 'chipping' in a Fiver towards the prize-giving and to Bob Plain and John Kirkpatrick for generously donating a bottle of Scotch each to the Benevolent Fund Raffle.

Results:—

1st J. McWilliam (West Byfleet)	68	Net
2nd W. F. Machin (Addington Court)	70	..
3rd R. Tempest (Darenth Valley)	71	..

New Members

A warm welcome to the new members whose names are listed below:—
F. V. COLLYER (New Zealand)

M. J. Smith (Porters Park) and George Norton of **Huxley's Garden Machinery**. A warm welcome also to KENNETH DOTT who joins the Southern Section from the North West.

Congratulations

To Adam Finnie who leaves the Blackheath Golf Club to take over the Villarceaux Country Club in France. Keep in touch Adam!

Subscriptions

I am still receiving wrong amounts, occasionally cash in ordinary mail (cheques or Postal Orders only please) and members enquiring the sub rates:

Head Greenkeepers (Class A)	£4.00
First Assistants (.. B)	£3.00
Assistants (.. C)	£2.00
Apprentices (.. C)	£2.00
Trade Members (.. E)	£2.50

Entrance Fee for new members—50p.
Subscriptions for all members are due on 1st MAY each year.

F. W. Ford.

South Coast Section

Chairman:
E. R. JAMES

Secretary:
N. M. STIMSON
North Wilts. G.C.
Devizes.

Members are reminded that their subscriptions for the year 1974/75 should have been paid, and I shall be pleased to receive outstanding subscriptions at once.

We welcome to the Section the following Honorary Members and hope their association with us will be a long and happy one:—

A. KITCH (Maxwell M. Hart
(London) Ltd.).
M. C. EMM (H. Pattison & Co.,
Ltd.).

N. M. Stimson (Mrs.)

Hon. Secretary.
c/o North Wilts Golf Club
Bishop's Cannings,
DEVIZES, Wiltshire SN10 2LP.

North-West Section

Chairman:
E. WALSH, ESQ.

Hon. Secretary:
H. M. WALSH, ESQ.,
Tel: 40050

Obituary

It is with deep regret I have to inform members of the sad passing of one of the Section's oldest members, Charlie Brassington of Crompton & Royton Golf Club.

I have known Charlie for about 30 years, other members may have known him longer, such as B. Ellis, W. Sumner, A. Fyles to mention but a few, but I think we would all agree he was a good man and a good Greenkeeper and the greenkeeping world is now the poorer. On behalf of all members I wish to extend to Mrs. Brassington and family the Section's deepest sympathy in their sad loss.

Autumn Tournament

The Autumn Tournament will be played over the Priestbury Golf Club course on Thursday 10th October 1974 by kind permission of the Captain and Council. Details nearer the time but entries as soon as possible.

New Members

We welcome to the Section the following new members and hope their association with us will be a happy one.

P. Whalley—Nelson Municipal Golf Course, Nelson, Lancs.

J. Leigh—Manchester Golf Club, Hopwood Cottage, Middleton, Lancs.

H. M. Walsh (Hon. Secretary)

Northern Section

Chairman:
J. SCOTT
Wetherby Golf Club

Hon. Secretary:
W. HEELES
7 Tentergate Close,
Knaresborough, Yorks.
Tel: K'boro 3851

President's Prize

The President's Prize was played for at the Leeds Golf Club, Cobble

Hall, Leeds on Wednesday 12th June 1974 by kind permission of the Club Committee and Members.

Some 40 members turned out for the occasion, the weather conditions were glorious. The golf course was in excellent condition and the Tournament was a great success, as it always is. Many thanks to our President W. (Bill) Mountain.

The winners were:

1st Div. First C. Geddes, Second H. Marshall, Third D. Storey.

2nd Div. First H. Shaw, Second A. Burge, Third R. Smith.

Midlands Section

Chairman:
G. HART

Hon. Secretary:
R. GOODWIN
2 Greenkeepers' Cottage,
Ashridge Golf Club,
Berkhamsted, Herts.

Day trip to Toro

A day trip to the Toro factory at Darlington has been arranged for Tuesday 12th November.

The coach will leave the car park off Broad Street, Birmingham between the Birmingham Civic Centre and Bingley Hall at 7 a.m. There is ample car parking room here.

We should arrive at the Toro factory between 10.30 a.m. and 11.00 a.m.

The coach expenses will come out of Section funds.

Please let me know if you wish to go, by the end of October at the latest.

R. Goodwin, Hon. Secretary.

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✓BRITISH TESTED

Smoothie

To see the 10-blade cutting cylinder of the Auto-Certes whirring smoothly across a golf green is the surest way of appreciating what a truly splendid piece of machinery this famous mower is.

And the finish rolling out behind the two-part landroll is a delight to anyone who really cares for fine turf. For a superb finish to golf greens, cricket squares and bowling greens Ransomes Auto-Certes is unsurpassable. Your local distributor would like you to see it for yourself. Contact him now.

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Choice of 18" or 20" cut.

Separate landroll and reel clutches allow precision control.

NEW high speed gearing on 20" Auto-Certes ensures a smooth 135 cuts per yard.

NEW airflow grassbox ensures full capacity filling, reduces emptying time.

The 10-knife impact-resistant steel cutting cylinder stays razor-sharp for longer.

Single-point height-of-cut from $\frac{1}{4}$ " to $\frac{3}{4}$ " at a microscopic $\frac{1}{64}$ " at a time.

Power-driven transport wheels mean quiet and easy site-to-site transportation.

Brush and comb set optional extra for turf grooming.

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RANSOMES



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