

in order to obtain uniform growth over a long period of time. Quickly available nitrogen material include ammonium sulfate, ammonium nitrate, nitrate of soda, ammonium phosphate, calcium nitrate, urea, and others.

Slowly available nitrogen materials release a major portion of their nitrogen over relatively long periods. These materials depend upon decomposition by soil microorganisms or hydrolysis to provide nitrogen in a form available to the plant. The activity of soil microorganisms is highly dependent upon soil moisture and temperature conditions. Under high temperatures and adequate moisture supply, microbial breakdown of these materials is accelerated. Under conditions of high temperature and low moisture or low temperatures the breakdown will be much slower. Materials dependent on hydrolysis for nitrogen release are relatively unaffected by temperature but are highly dependent upon adequate soil moisture. Within slowly available materials there are two general groups—natural organic materials and synthetic organic materials dependent on microbial decomposition, and synthetic organic materials dependent hydrolysis.

Natural organic materials include activated or processed sewage sludge, animal and vegetable tankage, manures, soybean meal, cottonseed meal, etc. Because these natural organic materials vary greatly in their chemical composition, there will be a wide variation in the rate of breakdown, although all of them will release their nitrogen at a slower rate than the quickly available nitrogen sources.

Ureaform compounds are synthetic materials made by the chemical union of urea and formaldehyde. Within a given ureaform material there is a series of chemical compounds with varying degrees of solubility and resistance to decomposition. As the soil bacteria decompose these materials,

the more easily decomposed materials break down first, followed by each successive compound. Thus, a small amount of nitrogen is constantly being released over a relatively long period of time. This permits the user to apply heavy applications of these materials at rather infrequent intervals. *Care must be taken not to confuse urea (quickly available nitrogen) with ureaform (slowly available nitrogen).*

IBDU (isobutylidene diurea) is an example of a synthetic material that is dependent upon hydrolysis to release its nitrogen. IBDU has extremely low solubility in water. As it is relatively unaffected by temperature, it has the advantage of releasing nitrogen, provided adequate moisture is available, during periods of cool weather when microbial activity is limited. IBDU has also been shown to be more efficient (more of the nitrogen applied is recovered by the plant) than natural organic or ureaform nitrogen sources.

To be continued

With grateful acknowledgement to the "Newsletter" of the GOLF COURSE SUPERINTENDENTS ASSOCIATION OF NEW ENGLAND, USA.

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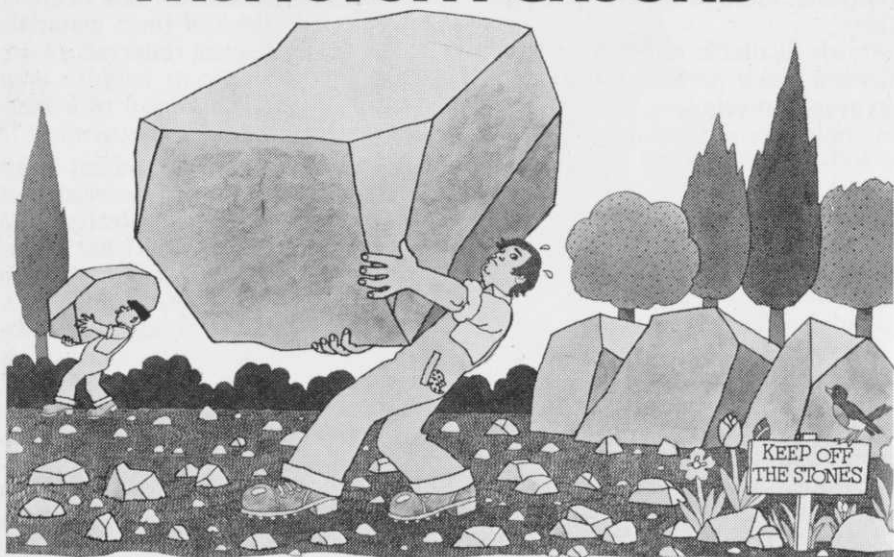
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BGG 5.74.

EXTRACTS FROM LETTER TO C. H. DIX FROM A. ROBERTSHAW, ONE OF OUR REPRESENTATIVES AT THE TURF ADVISORY COMMITTEE, held on April 24th 1974, under the Chairmanship of PROFESSOR A. D. BRADSHAW.

Adrian Robertshaw.

Among the items discussed, one which should be of great interest to members of the B.G.G.A. was, and here I quote from the minutes of the meeting—

“The Department of the Environment, (D.O.E) had asked the Natural Environment Research Committee, (N.E.R.C.) to undertake a review of the present extent and nature of grassland used for amenity purposes, and the research needed.

N.E.R.C. had set up an amenity grass committee under the chairmanship of Prof. Bradshaw, with Mr. Compson, Mr. Escritt and Mr. Forestier-Walker, as three of its members (these four gentlemen are members of the T.A.C.) Dr. J. M. Little had been appointed for two years to serve the Committee and prepare the review”.

Dr. Little will shortly be sending a questionnaire to all members of the T.A.C. from which he intends to form a list of priorities for amenity grass research.

It would be a great assistance to me in completing this questionnaire if you will put on the agenda of the A.G.M. in September, an item “Reports from Representatives on other bodies”—when the subject could be discussed, and a consensus of opinion formed from the members attending.

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LETTERS

19 Unit Road,
Ainsdale, Southport,
Merseyside.
16th July, 1974.

Dear Sir,

I have before me a letter from the B.G.G.A. titled 'Greenkeepers' Wages'. I've come to the conclusion it is just a worthless scrap of paper.

True it does say in the opening paragraph that wages levels remain the subject of negotiation between the Golf Club and the Greenkeeper in the light of local circumstances. True also that here in the North-West we have far too little bargaining power because of the absence of large industrial concerns and probably we are not by ourselves.

However, as greenkeepers we all have the same sort of problems and those of us on links perhaps more than our fair share.

I wonder if the B.G.G.A. realise that often wages levels for greenkeepers and their assistants are determined by the level of agricultural wages. I'm sure they do—but the agricultural workers are at this time subject to threshold agreements. I wonder how we can ensure we get our increase.

If we were affiliated to the T.U.C. this surely would be very easy. Even more important, we would I'm sure get the backing required to get more uniformity in wages.

We heard once again on T.V. from one of the 'Open' commentators about the shortage of courses both private and municipal and the inevitable shortage of experienced staff. How does the B.G.G.A. view this problem?

As greenkeepers our job seems to be to maintain a course in the best possible condition for continuous usage irrespective of weather conditions.

Surely it is not asking too much of the B.G.G.A. which has the backing of such influential men, to include in the 'Objects of the Association'—to secure and insist upon a National Salary Scale.

Yours faithfully,
E. G. Mawdeley
Head Greenkeeper

NEWS

We have received a nicely produced booklet entitled "Green Fingers and Grey Matter" published by Cannock Fertilisers Limited, Cannock, Staffs. WS11 3LW. This contains articles about growing roses, lawns etc. and is, therefore, aimed at the home gardener. However, a feature on soil and fertilisers provides information on N, P and K and the publication could be of interest to Green Keepers and especially useful to students and trainees. Cannock Fertilisers Limited will gladly send a copy on request, free and post free. Whilst writing, also ask them for their Green Keeping booklet.

Chipman Limited, Horsham, having earlier acquired from Cambridge Soil Services Ltd., the exclusive use of their new Sand Injection Turf Drainage System for the Government, Local Authority and amateur sports organisations, now announce that they have secured a complete franchise for this service extending to all U.K. markets including professional sports clubs. This equipment, for which patent application has been made, will now form an integral part of Chipman's expanding Turf Management service, especially in relation to waterlogged conditions and the poor swards which result therefrom.

Severe Spring Drought puts Playing Surfaces under Heavy Pressure

TAKE TURF ACTION NOW!

Just how could you combat the effects of the long, dry period that we had this Spring - the effects on turf in some cases have been pretty disastrous.

Ransomes would like everyone to benefit from their experience and to help you make the best out of what you have.

Not only now, but the year through, on a management basis.

Let's tackle each of the major problems that can affect your turf so seriously:

1. Soil Structure

Good growth depends on the soil being in good physical condition, with plenty of space in the soil for air, water and fertilisers to get down to the grass roots. The big enemy of this ideal condition is compaction - pressure from any source, tractor or footfall, can effectively seal the surface to prevent the life-savers getting down to the roots.

The farmer ploughs to cure this problem but the Golf Greenkeeper needs a less drastic remedy. Aerifying tools provide that solution. The unique action of Ransomes-Hahn Aerifying with specially designed 'spoons' ensures that the soil will be opened up and the soil structure maintained at its peak.

2. Thatch

Not all the grass blades stand up to be cut when you're mowing. And all mowers cut on a horizontal plane, so what happens to the blades that are lying flat on the ground? They form 'grain', uncut

blades that will remain flat until they die after about a month and become part of the 'thatch'. This thatch forms a roof over the soil that stops water and air penetrating, and, as it usually lays in one direction, it can have a very adverse effect on golf greens. And subsequently, on your putting! So how do we cope with this

mattress of grass? Simple really, we just use a mower that cuts vertically instead of horizontally, the Ransomes-Hahn 'Verti-Cut'.

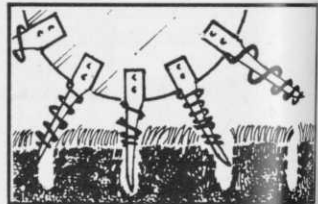
3. Top Dressing

It is the organic matter that we add - especially the organic material in the grass plant, that gives soils stability. The structure can, of course, be improved with materials like sand, humus and peat moss, depending on local conditions. This top dressing must be worked thoroughly into the surface.

Surface thatch accumulation must be removed by Ransomes-Hahn

'Verticutting' before top dressing is attempted and then top dressing penetration to the soil below is effected by the Ransomes-Hahn 'Power Drag'.

Repeated Ransomes-Hahn Aerification with its unique cultivating



Packed soil now has room to expand into the scooped out holes. The root-zone is opened out to enable air, water and fertilizer to have the most benefit. Strong root formation is made more easily in the surrounding soil.

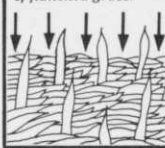
action is the best means of changing soil texture in the top 3 or 4 inches of the soil profile, allowing for the area to remain in use at all times. The action of the uniquely designed 'spoons' in removing cores of soil is the finest way of aerifying, and patented 'Flexi-press' springs fitted over each spoon prevent turf tearing.

RANSOMES SYSTEMS TO THE RESCUE

One of the prime defences against any sort of trouble is to know the enemy. Turf care is no exception. Weather can be very unpredictable. This year, a very dry Spring caused no end of problems, so we must make the best of the condition prevailing.

Ransomes knowledge of turf care goes a long way beyond mowing and their complete range of turf maintenance equipment is designed to ensure that your grass areas are as good as they possibly can be.

Air and water cannot penetrate 'mattress' of flattened grass.



Give your roots an airing

When it comes to spiking and slicing you'll have to look a long way to find anything more effective than the Ransomes-Hahn TM Models.

The cultivating action of the aerating 'spoons' are the result of patient research into the surest way that the spiking will allow air, water and fertiliser to do most good. This action is unique to Ransomes-Hahn. Turf tearing is prevented by the patented 'Flexi-press' springs which fit over the spoons. Alternatively, the double point spiker blades cut cleanly and quickly. Three point tractor attachment makes the TM models highly manoeuvrable to deal with normally inaccessible areas.

Point for point you can't do better than employ Ransomes-Hahn turf maintenance equipment, talk it over with your Ransomes dealer.

Check these features

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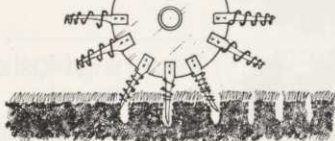
Ransomes Sims & Jefferies Ltd., Ipswich.

RANSOMES

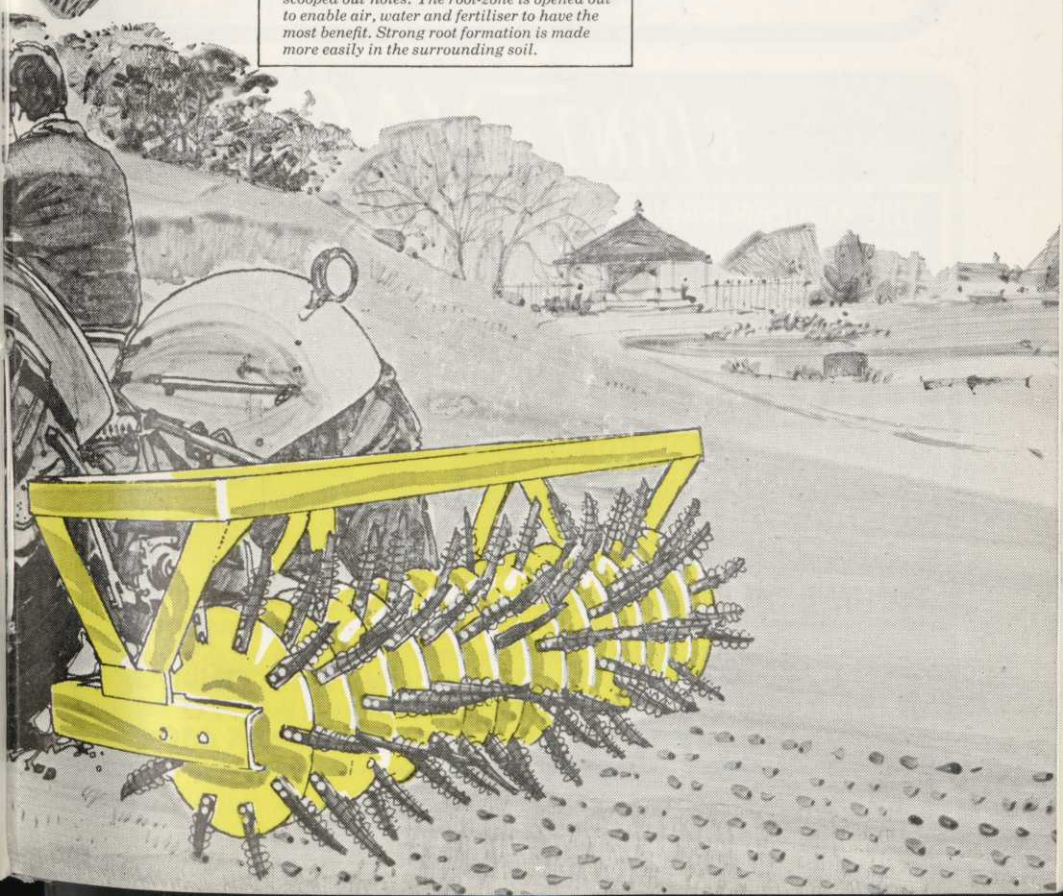
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Packed soil now has room to expand into the scooped out holes. The root-zone is opened out to enable air, water and fertiliser to have the most benefit. Strong root formation is made more easily in the surrounding soil.



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By 1972 a number of small outlets had been established, these being mainly in the field of Orchid growing and it was then that **Bark Products Bristol** was formed to market mixed conifer bark. The company operates in co-operation with the Imperial Group at St. Anne's Board Mills at Bristol and has received the full technical advice of the Forestry Commission in processing the large bark throw-off from this Mill and its subsidiary **Western Softwoods**. This throw-off is in the region of 12,000 tons per year and is composed of Scots Pine, Larch, Spruce, Douglas fir and comes mainly from the Welsh forests.

The Processing of Bristol Bark

The logs for pulping are de-barked in a large water friction drum and the shredded bark then passed on a moving belt to the pulveriser, the pulverised bark then being taken to the curing yards where it is stacked in 100 ton heaps.

Careful processing is necessary because two accusations have been levelled at bark in the Horticultural field. 1. The risk of introducing honey fungus with bark. 2. Toxicity. In the case of honey fungus any rhizomorphs which may be present are likely to be destroyed by the pulverising operation.

It is known that fragmented rhizomorphs are incapable of survival for more than a few weeks and are most unlikely to cause reinfection (J. R. Aaron, Forestry Commission (1972) *Pulverised Pine Bark*. J. Roy. Hort. Socy.).

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