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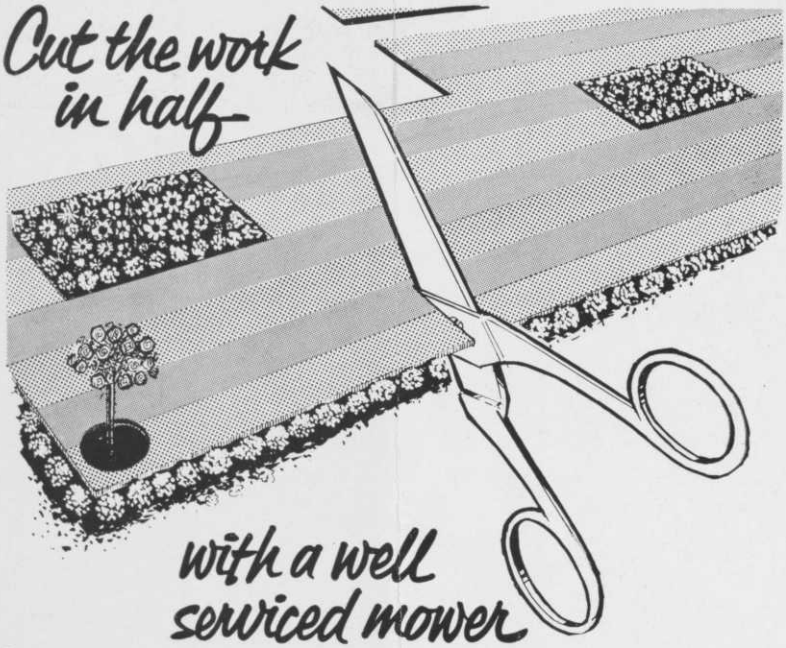

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THE BRITISH GOLF

GREENKEEPER

HON. EDITOR: F. W. HAWTREE.

BGGA JOURNAL

FOUNDED 1912.

PUBLISHED MONTHLY FOR THE BENEFIT OF GREENKEEPERS, GREENKEEPING AND THE GAME OF GOLF BY THE BRITISH GOLF GREENKEEPERS ASSOCIATION

No. 206 New Series
MAY 1962

Conscience is the inner voice which warns us that someone may be looking.

H. L. Mencken.

MAY

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EDITORIAL AND ADVERTISEMENT OFFICES: Addington Court Golf Club, Featherbed Lane, Addington, Croydon, Surrey. Telephone: SANderstead 2690. SUBSCRIPTION RATE: 14/- for 12 issues post paid. Published during the first week of each month. LATEST COPY DATE: 8th of month prior to insertion. *Contributions and photographs of interest are invited.*

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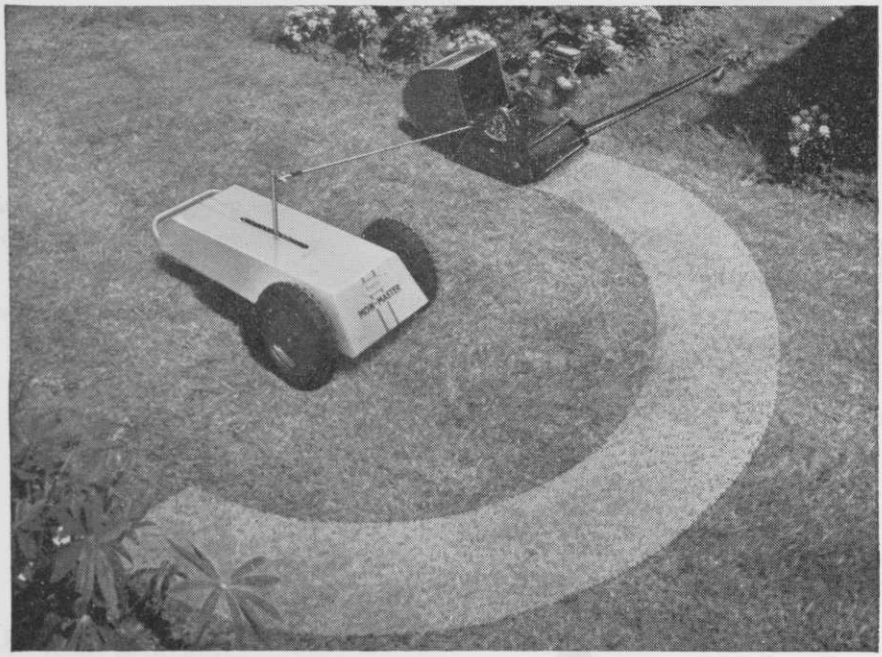

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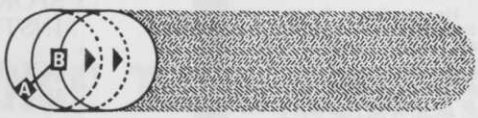

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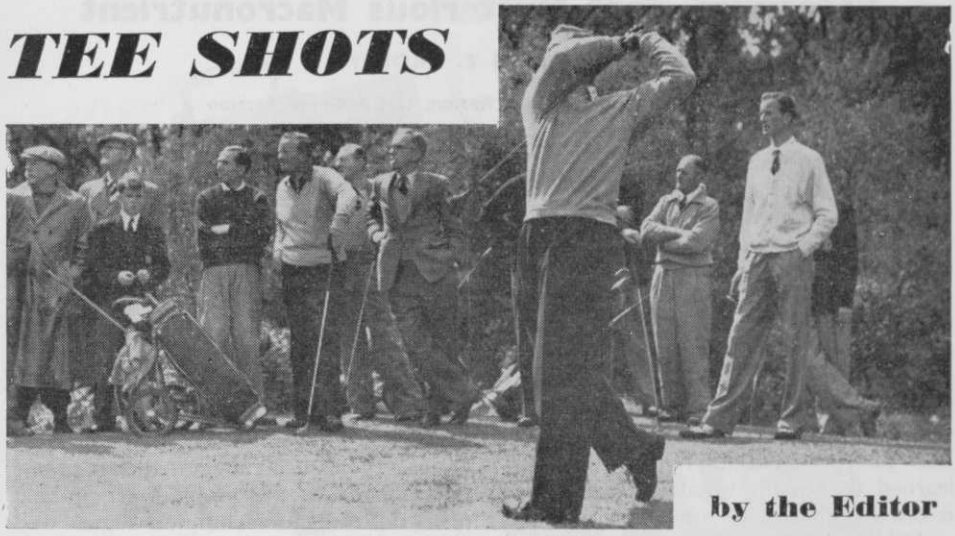

by the Editor

An Apprenticeship Scheme has now been prepared at the request of the Executive Committee of the Association. The proposals have been sent to each Section Representative and to all golfing organisations likely to be interested in the realisation of such a scheme. There will be a pause of some months before the scheme has been considered, criticised, revised, and, if there is general approval, instituted. Once it has begun, there will be need for the help of individual greenkeepers in many ways and you will be kept informed of progress until that stage is reached.

★ ★ ★

The North Eastern Greenkeepers have now formally resolved to restore their link with the B.G.G.A. and we hope that through this magazine they will be able to keep in touch with each other and the Association as a whole. They are fortunate in having Mr. Leslie Jones as President. He has worked tirelessly to get them the support from clubs which they need. Chairman, J. Simpson, and the Hon. Secretary, Tommy Oliver, will already be well known to many readers and we hope to see more of the Section soon at one of the Annual Tournaments. Next year their President will also be President of the English Golf Union, a distinction which all will welcome but this Section with especial pride.

★ ★ ★

Landing at London Airport in a Caravelle from Brussels the other day, we were surprised to be greeted by fire-engines. A tactful steward explained that one engine had caught fire and we had flown on the other one alone for the last half hour. With this information we were able to congratulate ourselves at last on the sangfroid with which we had come through this gruelling ordeal and seeing the ground at the comfortable distance of about 10 ft. below us, we felt able to enquire what happened if the other engine caught fire.

"You still go on flying!" he said.

While anxious to believe this, another question was obviously necessary.

The steward explained patiently that before being put into service, the Caravelle had been flown over Paris at 10,000 feet and both engines had been cut. Even so the aircraft had been able to glide and land at Geneva.

"That's all very well," said our neighbour crossly, "but what about if you're going to London?"

★ ★ ★

Potassium—That Mysterious Macronutrient

By CHARLES E. CROLEY

Agronomist, Southwestern Region, USGA Green Section

OF the various soil minerals known to be essential to plant growth, potassium was among the first to be recognised. One of the first observations of potassium-plant relationships was that potassium is required in relatively large quantities by plants. Yet, since those early observations, progress has been slow in understanding the specific part potassium plays in plant growth and development. Through scientific investigations and practical observations we have learned that plant uptake of potassium is often higher than any other mineral and that a deficiency of potassium will give a very marked decrease in growth and, if the potassium level is low enough, even death of the plant. Since the beginning of the 20th century, emphasis on quality of crop production, especially in turf management, has increased to a prime factor. Here, too, potassium and plant quality are very closely related. It seems only profitable, then, to survey briefly what is known of the potassium-plant relationships.

Function of Potassium in Plants

Voluminous amounts of investigations on potassium-plant relationships have clearly indicated that unlike nitrogen, phosphorus, calcium, and magnesium, potassium is not a permanent component of any organic compound or structural part of plants. Its total apparent existence is in the form of soluble inorganic and organic salts, the greater portion being the inorganic forms.

Recent investigations have indicated that potassium affects the metabolic activities of plants in several ways, most of which appear to be enzymatic. Lawton and Cook report that evidence now available shows that potassium affects the following processes: (1) synthesis of carbohydrates, (2) translocation of carbohydrates, (3) reduction of nitrates and synthesis of proteins, particularly in meristem tissues, and (4) normal cell division. It is also suggested that potassium plays a part in maintaining turgor in plant cells as well as increasing disease resistance. Research further indicates to some investigators that potassium may affect photosynthesis through its influence on chlorophyll.

Concerning carbohydrate synthesis, it has been reported that a decrease in available potassium is associated with a decrease in carbohydrate content of the plant and that high potassium content is necessary for high carbohydrate synthesis. It has been suggested that potassium may play a major part in the formation of more complex sugars and starches from the simple sugars in plants —a lack of potassium appeared to cause an increase in simple sugars as compared to total carbohydrate.

In the Cell

Practically coupled with potassium-carbohydrate studies has been the investigations of potassium as related to the structure of stems and cell walls. It is generally held that adequate supplies of potassium are necessary for the formation of stiff straw or stalk. Researchers have reported that when carbohydrates are present in high amounts, stem structures are likely to be strongest. Such a report strongly supports the potassium-stiff straw relationship. But if carbohydrates are used up in protein synthesis as when high amounts of available nitrogen are present, stems and plant tissue may not be stiff even though there is an abundant amount of potassium present in the plant.

There are a few workers who have suggested that the presence of potassium and calcium in the plant sap increases the uptake of nitrate nitrogen. These same investigators state further that such activity does not seem to hold true with all species of plants.

There is considerable belief, however, that potassium definitely influences the synthesis of proteins in plants. Some investigators believe there is a direct relationship between potassium and protein synthesis while others hold that the

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relationship is an indirect one. The overall effect agreed upon is that potassium-deficient plants are generally lower than normal in protein content. Along this same line it is suggested that with high nitrogen supply and deficiency of potassium there may result a toxic condition to plants from a too high accumulation of ammonia in the plant.

A number of reports have been made that potassium is in some way associated with cell division and actively growing plant tissues. Often it has been found that in potassium deficient plants the potassium is moved from older tissues to the actively dividing cells of the meristematic tissues. The effects of this phenomenon are observed in grasses by a yellowing of the margins and tips of grass blades. In such a case the potassium, being deficient in the plant, has migrated to the base of the leaves where intercalary meristematic tissues exist. There is still a great deal of doubt as to the function of potassium in cell division but the feeling is that it is associated with protein synthesis.

Combats Disease?

Adequate levels of potassium in the plant have been reported to maintain and in some cases increase disease resistence in the plant. Here again just how potassium causes this effect it not known. A general belief is that it is brought about by the ability of potassium to regulate chemical reactions in the cells of the plant. When potassium is deficient, there usually exists excess nitrate and phosphorus, thinner cell walls in epidermal tissues, reduced production of amino acids because nitrate reduction is suppressed, a marked decrease or halt in the accumulation of carbohydrates, a failure to produce new cells for want of essential amino acids for the protoplasm, and slower growth of meristematic tissues that would permit replacement of diseased tissues. Under such conditions caused by potassium deficiency, disease organisms can more easily enter the thin cell walls, obtain the abundantly available nitrogen necessary for their growth, and more easily damage plant tissues which the plant is unable to replace at a competitive rate.

Potassium is also given partial credit for the maintenance of proper turgor in plant cells. Turgor is the state of living cells being plump and swollen as a result of internal water pressure. In this respect it is reported that potassium affects the cell sap and helps to regulate the degree of swelling and the water economy of cells.

Concerning potassium and photosynthesis, some workers suggest that potassium has an indirect effect. It is known that photosynthesis takes place in the chlorophyll molecule, and that CO2 as well as water and light are needed for the process. Some scientists feel that potassium enables the chlorophyll molecule to accept CO2 more readily, which in turn affects the photosynthesis process —the process from which plant food is derived. It is also thought that potassium, perhaps by way of activating enzymes, plays a definite role in the manufacture of the chlorophyll molecule.

A. G. Kennelley has been quoted as summarising the role of pottasium in plants as follows : "Potassium is important in the general health of the plant, particularly in developing sturdiness and disease resistance. It helps to promote the growth of woody tissues and usually improves textures, colour, and quality".

Supply of Potassium to the Plant

The plant receives its potassium from the soil. It is generally known that heavy soils or soils high in clay content have the ability to hold more available potassium than light soils or those high in sand content. The available potassium is supplied to the soil from the weathering of potassium minerals, which contain unavailable potassium. Generally the unavailable potassium makes up approximately 99% of the total potassium in the soil. In many cases the amount of such minerals in the soil and the rate of weathering of these minerals is great enough to supply adequate amounts of available potassium to the plant. However, when the weathering of enough minerals is too slow or the available potassium is lost at too rapid a rate by plant removal, leaching, and erosion, potassium must be added to the soil in the form of fertiliser.

The available potassium is taken into the plant by the root. There is widespread belief that the root cells immediately associated with the uptake of potassium and other minerals as well must exert a considerable amount of energy in order to absorb the potassium.

It has been well recognised that soil aeration is necessary for normal root growth and nutrient absorption by roots. And it has been observed that poor aeration apparently has more pronounced inhibitory effects on potassium than on any other elements. The effects of aeration on potassium absorption are primarily on the plant roots and not on the status of potassium in the soil. The effects of a lack or adequate aeration are due to either a lack of oxygen to the roots, or a toxic effect of too much carbon dioxide on the roots, or both. This point still remains a mystery. Excess soil moisture and soil compaction affect the absorption of potassium in that they limit soil aeration. Unless a soil can be adequately drained and relieved of compaction, aeration will be limited.

A number of investigators have found that very low soil moisture considerably reduces the absorption of potassium by the plant. This effect is a result of both the dehydration of the plant and a reduced availability of the soil potassium.

Most workers have concluded that mineral nutrient absorption is reduced under low environmental temperatures. It has been found that within the range of 50° F. and 77° F. potassium absorption changed directly as the temperature changed.

Potassium Fertilisation of Turfgrass Areas

There are a number of potassium fertiliser materials. The most widely used material, however, is potassium chloride, commonly called muriate of potash, which contains from 50 to 60 per cent K20. This fertiliser can be applied alone or in a fertiliser mixture with phosphorus and/or nitrogen materials.

The amount of potassium fertiliser to apply and the time to apply it will depend on several factors. These factors are : (1) The amount of available potassium in the soil. If, at any time during

continued on page 16

MY SYSTEM WITH COMPOST

George Herrington, Lindrick's popular Head Greenkeeper, gives some useful pointers on a seasonal task.

THE first and obvious thing is to decide on the composition of the compost. Soil, sand, peat, leaf-mould, sewage sludge and deep litter if made from peat, may all be used.

For soil, the top spit of your own course may be used. This should always be kept in stock whenever you have any space available as it will improve for riddling ofter being stacked.

Leaf mould can very often be found within ten miles of your own course. It may be possible for members to pull a few strings in order to get your own constant supply.

10/- per Ton

Peat can be bought in 1 cwt. bags but it is rather expensive. We are very fortunate in this respect as we can buy very good peat soil at 10/- per ton, plus the cost of transport.

Sewage sludge may also be bought ready for use, but we get our own from our local sewage works for 1/- per tractor load. This I like to keep for two years, keeping it well turned over. It then breaks up far better.

Deep litter can also be useful if got from someone who beds down with peat, not shavings. We bought some from a poultry farmer who had kept it in deep litter houses for three years. We gave him the price he paid for the baled peat, so we got the peat plus three years' poultry manure as well for the original price. This we stacked with alternate layers of soil and kept for one year before using.

I once tried slaughter house refuse just after the war when things were scarce. We built a wall with old turf, then got a load of refuse from the slaughter house, put it in the centre and covered it with a layer of soil. This process was repeated using alternate layers of refuse and soil. Laying it was rich but messy.

Riddling

Once the compost is mixed, the process is completed by a shredder to break it down. It is then put through a $\frac{1}{4}$ in. riddle and finally through a $\frac{3}{16}$ in. riddle by hand. The fine dressing is then used for greens and the rest for semi-greens and tees.

One of the chief reasons why many greenkeepers do not make their own compost is lack of a suitable, warm, dry shed in which to make it during the bad weather. Clubs should provide suitable facilities for compost making as the original outlay will soon be amply repaid by the consequent saving on bought compost.

When and How to Compost

I like to spike my greens as soon as they start to grow, that is, late March or early April. The method I use is one man a green in front spiking and the rest of us following on with compost using 30 cwt. per green. We wheel this on the greens with balloon tyred barrows and spread with shovels. The compost is then brushed and drag-matted about six times. Then we rod well and iron roll. For the next few days we brush, drag and rod the greens which we think gives them their very fast pace.

Personally I cannot see the value of spiking and composting in the Autumn. I like to leave the greens as firm as possible in Winter as they are played on throughout the Winter months.

News

from the Sections

NORTHERN

By J. Parker

Chairman: G. W. MASON (Halifax West End)

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

MEMBERS ARE REMINDED THAT subscriptions for the year 1962-3 are now due. Early payment will be much appreciated.

Film Show

The last get together of the winter session was held on Tuesday, 20th March at the White Swan, Leeds. This was in the form of a film show and 45 members were present. The films of Penfold/Swallow Tournaments played at Barnton and Prestwick were of excellent quality and much enjoyed by all. An additional one of the Bing Crosby Tam-O-Shanter Tournament was shown at the end of the evening. A vote of thanks to Mr. Teddy Foulds who kindly projected the films, was proposed by our chairman, Mr. G. Mason, and seconded by Mr. W. Mountain, President. Our thanks are due to Swallow Rainwear of Birmingham who kindly loaned us the films of the Penfold/Swallow Tournaments.

Autumn Course S.T.R.I.

Two places have been reserved for the Autumn Course of Instruction at the Sports Turf Research Institute, Bingley, to be held from the 22nd to 26th October, 1962. Any member of this Section wishing to attend is asked to forward his name to me as soon as possible. The Section will pay the registration fee, but members attending will be responsible for their own travelling expenses and meals.

Grand National Sweep

May I take this opportunity of thanking all members who supported the Sweep by selling tickets, and especially Mr. Bob Newbould who once again sold one hundred books. Who is going to challenge him next year?

SOUTHERN

By W. Mason

Chairman: J. K. GLASS (Thorpe Hall)

Hon. Secretary: 18 Albert Road, Hendon, N.W.4. Tel.: SUNnyhill 0245

OUR ANNUAL GENERAL MEETING will be held at the Stirling Castle on Wednesday, 30th May at 6-30 p.m. Will members please make a special note of this date and every effort to attend.

March Meeting

In the absence of our President, Mr. F. Chambers, who, unfortunately had a previous engagement, Mr. J. Glass acted as Quiz-Master and Chairman at our last Meeting.

We had a most enjoyable evening, and typical of the many questions asked were, "How many members spiked their greens" and "How often greens should be dressed".

A debate followed on the best method of ridding greens of thatch. The general opinion appeared to be the use of Chlordane either in liquid or granulated form as this also acts as a worm killer.

Mr. J. Glass had a very busy evening and I would like to congratulate him on the way in which he conducted the meeting.

Subscriptions

May I draw the attention of members to the fact that subscriptions for the year 1962/63 are due on 1st May. An early return of these will be greatly appreciated.

Association Ties

I still have a few Association ties and will be pleased to post one to members on receipt of 10/6d.

Spring Tournament

The draw for the Spring Tournament will take place on Tuesday, 1st May. All competitors will be notified at a later date when they will receive a copy of the draw sheet.

New Member

We welcome to our Section Mr. A. Littlewood of Burnham Beeches Golf Club, Burnham, Bucks.

MIDLAND

By F. Cashmore

Chairman: G. HART (Gay Hill)

Hon. Secretary: 76 Four Oaks Common Road Sutton Coldfield, Warwickshire.

MEMBERS WILL BE SORRY TO HEAR that Albert Oakley, Greenkeeper at Moor Hall Golf Club is in hospital recovering from an operation. We wish him good luck and a speedy recovery back to health.

New Member

We welcome a new member at the commencement of the new year. From the Shirley Park Golf Club, W. Handy, 251 Golden Hillock Road, Sparkbrook, Birmingham, 11,—no relation to Bill Handy from Olton.

NORTH-WEST

By B. Ellis

Chairman O. P. JONES, (Bramhall G.C.)

Hon. Secretary: Romiley G.C.

OUR SECTION ANNUAL MEETING will be held at the Garrick Hotel, Fountain Street, Manchester, on Thursday, 7th June at 7-0 p.m. Will members please note that no other notice will be given.

SITUATIONS VACANT

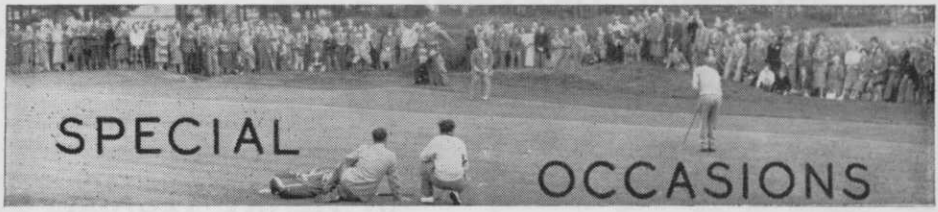
WORKING HEAD GREENKEEPER required for Whittington Barracks Golf Club, Tamworth Road, Lichfield. House provided. State experience and salary required to Hon. Secretary.

WORKING HEAD GREENKEEPER—two kept—required mid-May for Swindon Golf Club (18 holes). Swindon 7 miles, Marlborough 5 miles. Wages by arrangement. New bungalow (1961) available. Apply with full particulars, Honorary Secretary, Club House, Ogbourne St. George, Marlborough, Wilts.

WORKING HEAD GREENKEEPER required end of May. Three assistants kept. Apply, stating age, experience and wage required to The Whitley Bay Golf Club, Briar Dene, Whitley Bay, Northumberland.

MISCELLANEOUS

PROFESSIONALS AND GREENKEEPERS having stocks of used golf balls contact Sparkbrook Golf Ball Co., 295 Highgate Road, Stoney Lane, Birmingham, with a view to filling export orders.



MAY

16th Southern Section, Spring Tournament, Finchley Golf Club.
30th Southern Section, A.G.M., Stirling Castle, 6-30 p.m.

JUNE

7th Midland Section, President's Match, Handsworth Golf Club.
7th North West Section, A.G.M., Garrick Hotel, Fountain Street, Manchester, 7 p.m.

AUGUST

13th, 14th and 15th B.G.G.A., A.G.M. and Annual Tournament, Pyle and Kenfig Golf Club.

GOOD GRASS DOES NOT MAKE TRUE GREENS

By MAURICE WOODBINE

(Golf Correspondent of The Birmingham Post)

ONE of the unhappy signs on many golf courses in recent years has been the inability of officials concerned with the maintenance of the courses to realise that there is a little more to the problem than the mere growing of grass.

One does not attempt to decry the admirable work being done by various firms who specialise in the treatment of sports grounds, but the advice they give has to be tempered with a certain amount of knowledge on the part of those who make the decisions as to what methods are used.

The people most qualified to do that are the professionals and greenkeepers at the club concerned, but more often than not their advice is overruled by those who have only the scantiest idea of what is necessary.

It can be said that no serious damage is done, so long as these deliberations affect only the fairways, but when we come to the greens a vastly different situation arises.

The essential need of greens is that they should be true. The texture of the grass is certainly important, but is of secondary value to that of the actual surface.

Rolling

There are those clubs who will not have a roller put on their greens because they are concerned solely with the growth of the grass.

If, by reason of the type of soil involved, rolling is necessary—as it is at many courses—this attitude is absurd. The accurate surface is far more important.

It makes no difference to the run of the ball—or no difference which can be assessed—if there happens to be a little clover amid the grass, but it makes a great deal of difference if the entire surface of the green is blemished and scarred from heel-marks, worm-casts and the like.

I simply cannot understand why men of limited experience wish to override those who have closely studied such matters. It is up to those who play on these courses and find that their otherwise accurate putts are deflected from their real direction by the uneven nature of the ground to make their complaints to the committee.

In that way this stupidity may be overcome by the mistaken attitude of their committee being brought to a head.

With grateful acknowledgments to The Birmingham Post.

TALLY-HO IN THE HIGH STREET

by HENRY TEGNER

A FRIEND of mine who lives in the ouskirts of the local spreading town rang me up the other day to complain that a fox had been at his pet gander. This man likes geese and he keeps a goose and a gander—they never seem to produce any offspring—in his backyard.

He had been woken early in the morning by a most fearful row and he was just in time to see a big fox departing over the fence at the bottom of the garden. Now my friend knows a fox when he sees one. In his younger days he spent nearly every winter Saturday hunting with the pack of hounds with which I am connected.

This was why he rang me for he wanted to know whether hounds could meet somewhere near at hand and try to do something about the urban foxes which, he said, were becoming a menace to the resident poultry.

Arrangements were made for hounds to meet at a house five miles from the built-up area. It was intended to draw towards the houses during the course of the day.

The first cover, a wood of an acre and a half in extent, produced a fox which circled twice and then set his mask straight for the suburbs. A five-mile point ended up among the pavements. Hounds were called off in case of damage to private property.

They were taken back into the country to draw again and the same thing happened. We had three separate foxes in front of us that day and they all went to town, as it were, to save their brushes.

To show willing, hounds met again three weeks later near suburbia. Before drawing, the master sent the car followers ahead to try to form a cordon between the countryside and the town. When hounds found their fox he set his mask, like a homing pigeon for suburbia and ran through the cars without hesitating. Hounds followed him down the paved roads eventually to mark their quarry to ground in a hole beneath the back-garden of a council house amongst litter, empty cans and garbage.

When we reached the pack there was a line of curious human faces peering over the back-garden fences at the sight of foxhounds and dismounted men and women standing amid their steaming horses. There was nothing to do but to leave the fox where he had found sanctuary.

I have always had a high regard for the intelligence of the fox. He is certainly one of our cleverest wild animals.

(*Continued foot of next page*)

SPORTS TURF RESEARCH INSTITUTE
ANNUAL GENERAL MEETING

The eleventh Annual General Meeting of the Sports Turf Research Institute was held at St. Ives Research Station, Bingley, on Monday, 16th April under the chairmanship of Mr. Alan Sowden.

In the annual report, reference is made to the great honour done to the Institute by H.R.H. The Duke of Edinburgh who, in June, 1961, graciously gave his patronage to the Institute.

Reference is also made in the annual report to the research programme carried out during the year. This included further work on moss control, top dressing experiments and variety trials with grasses. New fungicides for use against diseases were investigated and, at the request of May & Baker, Ltd., trials were carried out with a view to evaluating two forms of urea formaldehyde resins in comparison with other nitrogenous fertilisers.

The Revenue Account for the year ended 31st December, 1961 showed an increase in general income of £2,266 to a total of £30,663, whilst expenditure rose by only £732 to £29,083. The surplus of £1,580 was capitalised in accordance with the provisions of the Articles and will be used to further the main objects of the Institute.

The Institute's advisory service continued to be in great demand throughout the British Isles and Europe and education was continued through courses at Bingley and by the giving of lectures.

Elections to office included the reappointment of Lord Brabazon of Tara as Honorary President, Sir Bracewell Smith, Mr. Carl Bretherton and Sir William Worsley as Honorary Vice-Presidents, Mr. Alan Sowden as Chairman and Mr. Carl Bretherton as Vice-Chairman.

TALLY-HO IN THE HIGH STREET—*cont.*

With the growth and spread of our towns and cities into the surrounding countryside, it is not surprising that a breed of urban foxes has grown up.

Surroundings of this nature are usually extremely safe for foxes, providing plenty of shelter and bounteous feeding. The only hazard a town fox has to face is traffic—a menace that is also man's.

The fox is an extremely adaptable creature. When myxomatosis swept the land clear of rabbits, which were supposed to be their mainstay, foxes quickly accustomed themselves to an alternative diet.

Foxes have found it easy to adjust themselves to a city life. City dwelling for a fox can be comfortable. In the open country men with hounds will hunt them.

There is plenty of good sustenance too in these urban places. Mice, rats, unenclosed poultry, plenty of garbage and a plethora of unconsumed scraps put out for pets.

A fox is not an underground dweller in the same sense as the badger. Plenty of vixens have their cubs above ground. If they have them in an earth, they often shift them early to another habitation.

Townee vixens soon learn that there is no need to bother with a deep hole. In any case, such places are not easily found in and about human dwellings and the fox itself is not a good excavator.

Once they have established themselves as suburban dwellers, foxes are almost impossible to eliminate.

I know one breeding earth in an open space in the midst of suburbia in which the occupants were dealt with by gas, but it is the only one and I doubt whether the mass murder made much of a dent in the local vulpine population. Urban foxes are here to stay.

With grateful acknowledgments to The Farmers' Weekly

THE SCOTTISH GOLF GREENKEEPERS' ASSOCIATION

THE ANNUAL TOURNAMENT OF the Scottish Golf Greenkeepers' Association will take place at Carnoustie Golf Club on Thursday, 21st June, 1962 by kind permission of the Committee.

Ian Fraser,
General Secretary.

NORTH & MIDLAND SECTION

OUR ANNUAL TOURNAMENT WILL take place at Montrose Golf Club on Thursday, 7th June at 1-45 p.m. by kind permission of the Committee.

New Member

We welcome to our Section Iain R. Armit of King James VI Golf Club, Perth.

W. Ritchie,
Secretary.

LOTHIANS GOLF ASSOCIATION

Short Report on Meeting of Green Conveners and Greenkeepers

Mr. W. A. W. Sivewright presided over a gathering of 31 Green Conveners and Greenkeepers held in Edinburgh.

The Chairman, in his opening remarks, pointed out that this was only an exploratory meeting and all the subjects on the agenda could only be discussed in general and if it was felt that progress could be made or action taken in any direction then a committee would have to be formed to carry out the detailed work involved.

After a general discussion on bulk buying of seeds, sands and fertilisers, loaning of Equipment, etc., it became evident that much information would have to be procured from clubs before progress could be made. At this point a committee consisting of W. Skene (Merchants), T. Cowper (Dalmahoy), T. D. Harkins (Musselburgh) and F. Hunter (Prestonfield) was formed. They were requested to get from clubs the following information.

(a) What equipment was available in the Lothians? was any of it available for loan?

(b) Were any clubs interested in grouping together with the idea of purchasing between them any major items for course maintenance?

(c) Get information from clubs about sources of supply and cost of seeds, sands and fertilisers.

(d) When available this information was to be circulated to clubs for individual action.

(e) Were any green conveners or greenkeepers interested in the possible formation of night classes by the College of Agriculture.

During the free and general discussion that took place the following interesting statements were made :

(a) Many neighbouring clubs do lend equipment.

(b) Many clubs purchase a large number of items at very favourable rates from friends of the club.

(c) Green Conveners are only messengers between the Council and the Greenkeepers and as they only serve for a year or two, this period is not long enough for them to become interested in the job.

(d) Greenkeepers would rather have a Green Convener who served for a lengthy period. Someone interested in the job with whom they could discuss their many problems. He might never have any practical knowledge but he could learn to talk the same language.

The question of greenkeepers' wages was raised and the Chairman said there was no authorised scale in existence. Efforts were being made by the Association of Golf Club Secretaries to frame a recommendation to clubs on this matter. Some Clubs tried to use the agricultural rates but in general it was being found necessary if good men were required to pay rates comparable to that paid locally in industry. Some clubs were now operating a superannuation scheme.

Lindrick Golf Club,
Lindrick Common,
Nr. Worksop.

To "Goblin",

Dear Sir,

About 25 years ago we had a hand sweeper called "Goblin" and "Devil's Advocate" is as much behind the times as that sweeper.

When I took over here after the war there were so many weeds that if all the members had turned out daily we would have been at it for years. So what did we do? We called in Bingley as a little bird had whispered to me that they had been working on selective weed killers to rid grass of all weeds. I straight away got my club to buy suitable spraying equipment so that we could do our own spraying when the weather was suitable. If a contractor is called in he has to do the spraying irrespective of the weather. Consequently, he tends to use a weed killer that will stand a certain amount of rain and which I do not think gives as good a "kill".

We sprayed all the greens, tees, fairways and semi-rough every year until 1960. Since then we have "spot" treated as we now have to look for weeds and it is not worth while spraying all over.

With weed killers such as these available, "Goblin" puzzles me on his course when he says they have a lot of weeds now as surely they could not have had many weeds in the old days if they hand weeded the fairways.

Yours faithfully,
G. Herrington,
Head Greenkeeper.

58 Abingdon Road,
Drayton,
Nr. Abingdon on Thames,
Berkshire.

The Editor,

Dear Sir,

Thank you so much for the Greetings Telegram which you kindly sent on the occasion of my Golden Wedding Anniversary.

Whilst writing may I take the opportunity of wishing continued success to the Journal, which by the way I still read with great interest.

Yours very truly,
C. C. Prickett.

Very glad to have news of you, Charles. You were at a Committee Meeting forty years ago in London with Tom Bridges and Tom Mason, and must, with them, be one of our most senior members.

It was always good to play at Frilford Heath when you were in charge.

I still remember that half-crown you gave me when the Greenkeepers' Tournament was at Sundridge Park in 192?. With compound interest, it is now worth nearly 6/8½ but does not go anything like so far.

F.W.H.

POTASSIUM—*continued from page 7.*

the growing period of the turf the available potassium is not sufficient, potassium will need to be added in a quantity high enough to adequately raise the potassium level. (2) The kind and amount of clay in the soil. Some types of clays hold more potassium than others, and some clay types hold potassium in a more available form than others. If a soil is high in clay, it will be able to hold more potassium than a soil which is primarily sandy. A sandy soil will need small but frequent applications of potassium whereas a soil high in clay may be able to provide sufficient potassium with larger but less frequent potassium applications. (3) The type of watering programme. Where the watering programme is heavy, potassium will tend to leach out of the soil more readily than where the watering programme is light. (4) Whether or not clippings are removed. Grass clippings contain a considerable amount of nitrogen, phosphorus, and potassium. O. J. Noer has reported that clippings removed from a golf green in Memphis, Tennessee contained nitrogen, phosphoric acid, and potash in the approximate ratio of 3-1-2, respectively. If the clippings are removed instead of being allowed to remain on the turf, potassium will be depleted more rapidly. (5) The kind of grass grown. All turfgrass species and varieties need available supplies of essential nutrients. However, some turfgrasses are cool season types and others are warm season types, and because of this difference the various types require greater amounts of nutrients at different times of the year. (6) the particular management of the turf. In general a turf that is mowed close and frequently will need more potash than one that is mowed higher and less frequently. A turf area that is designed to be kept in an active growing state the year round by either overseeding warm season grasses or by the use of permanent cool season grasses will more than likely need to be fertilised with potash more frequently and with an overall increase in amount of potash. On the other hand a turf area that is allowed to go dormant or partially so in the winter will not need an addition of potassium during the winter. In many cases the winter dormant period gives the potassium minerals time to weather, the result of which is at least a partial replenishment of the available potassium in the soil. If such weathering is inadequate to supply all the needed available potassium for the following growing season, applications of potassium will need to be made in the spring and anytime thereafter if the available potassium supply becomes short. It is also a good policy to have sufficient quantities of available potassium in the soil in the fall in order that the turf can become "hardened" for the cold winter temperatures. It is felt that plants well supplied in potassium and not overly tender due to high applications of nitrogen in the fall will be more capable of surviving freezing temperatures of the winter. There is also the possibility of getting too much available potassium in the soil. Plants are apparently unable to regulate the uptake of potassium; and if the soil supply is high enough, a so called luxury consumption may result. Under such conditions, the high potassium content in the grass plant may cause an excessive amount of stiffness in the stems and leaves as well as other undesirable or harmful effects. (7) The general weather conditions of the area. If there is a great amount of rainfall there is apt to be a need for more available potassium in the soil to replace that lost by leaching.

With grateful acknowledgments to the U.S.G.A. Journal.

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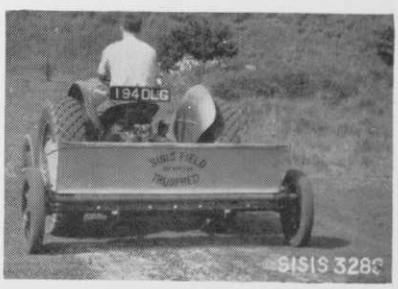

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Printed by the Herald Printing Works, York and London, for "The British Golf Greenkeeper"—57420