

JULY 1988

# *the* Golf Course



THE OFFICIAL PUBLICATION OF THE  
BRITISH AND INTERNATIONAL  
GOLF GREENKEEPERS ASSOCIATION

BIGGA



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# BIGGA UPDATE

AT the time of writing, we are well advanced with the planning and organisation of operations for the bunker-raking at the Open Championship. I am already aware of a number of visitors who will be heading for our marquee, most notably our President, Viscount Whitelaw, who will be visiting on Thursday, 14th July at noon. Members of the Board of Management and myself will be present throughout the week from 11th July onwards and we hope that the marquee will be

well-used by greenkeepers and their guests as a meeting place and for a general exchange of news and views. Remember that the marquee is situated away from the tented village - between the first tee and the eighteenth green. I hope to see you there!

#### DIARY DATES:

A brief resume of forthcoming events:-

26th - 30th September -

National Tournament/  
International Conference -

Ayrshire. Contact - Chris Kennedy, 82 Dumbreck Road, Glasgow, Scotland, G41 9DW. - Telephone 041-427-4242.

18th - 20th January, 1989 -  
European Turf Management  
Exhibition, Harrogate.

A three day series of educational seminars is being organised in conjunction with the ETME. Additionally, delegates will be able to enrol for the foundation module on the Safe Use of Pesticides, the course being run during the Exhibition. This course is particularly relevant

with an operative date of 1st January, 1989 for the implementation of the relevant legislation. The educational and training emphasis within BIGGA is beginning to take effect and full details of the seminar programme together with a booking form will be available shortly. Contacts: For the exhibition, Geo A Wright Exhibition Ltd, PO Box 104, Granby Buildings, 41 Granby Street, Leicester, LE1 9DY. Telephone 0533-557449. For the educational seminar programme, myself at Headquarters Office. Telephone 0274-560556. 4th - 6th April, 1989 - National Conference, Queen's College, Cambridge. The number of delegates will be restricted and places can be secured by forwarding a deposit of £15 per person to Headquarters Office. The Conference brochure when printed will be forwarded automatically to all those registering their interest with this office. Contact myself at Headquarters Office.

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## the Golf Course

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### CONTENTS

<b>Buyers Guide</b>	<b>2</b>
<b>Face to Face - Eddie Park meets the STRI's golf unit</b>	<b>10</b>
<b>Golf Course Improvements - a report from the Dundee College of Further Education</b>	<b>12</b>
<b>Research Update - Mike Canaway of the STRI</b>	<b>14</b>
<b>Sand Greens - a golfers view</b>	<b>18</b>
<b>Golf course construction - constructor Brian Pierson gives his opinions</b>	<b>19</b>
<b>Land of the Long White Cloud - Brian Turner visits New Zealand</b>	<b>20</b>
<b>The construction of golf greens - Jim Arthur</b>	<b>22</b>
<b>Turfgrass Pests - Nell Baldwin of the STRI</b>	<b>28</b>
<b>Appointments</b>	<b>39</b>

Front cover: Queenstown Golf Course, New Zealand as featured in 'Land of the long white cloud' page 20





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#### BIGGA LEAFLET

A leaflet on 18 Ways to Help your Greenkeeper aimed at the golfing public and your club members is available for general circulation. Copies for distribution can be obtained upon request from Headquarters Office, and will be available in the marquee at the Open Championship.

#### CHANGE OF SECRETARY

Please note that Mr Tony Naisbitt has relinquished the Secretary's role in Cleveland, and been replaced by Mr Roger Shaw, 12 Bede Terrace, Ferryhill, Co Durham. Telephone 0740-51065

**BIGGA WISHES TO ACKNOWLEDGE THE SUPPORT OF RUFFORD TOP DRESS SUPPLIES LIMITED, RUFFORD, LANCASHIRE AND ITS COMMITMENT TO THE FUTURE OF THE ASSOCIATION AND PARTICULARLY THE EDUCATION AND TRAINING COMMITTEE.**

#### EMPLOYMENT AGENCY SCHEME

Members are reminded of the need to send in registration forms as soon as possible. The date of implementation of the Scheme is dependent upon the response of the membership. An explanation of the Scheme is included within this edition of the magazine, together with a Registration Form.

One final comment this month - the Association is for the benefit of its members. The success of the events detailed above is dependent on member participation. If, traditionally, you have tended to be non-active within the Association,

give your backing to these national events by your attendance. Ayrshire, Harrogate and Cambridge are all attractive settings and the events are being organised for three primary purposes, i.e. to further establish the Association; as a contribution to greenkeeper education and training; and as a forum for the exchange of information amongst members as well as for their general enjoyment, with the opportunity to renew old friendships and make new ones. I look forward to seeing you at least at one of the events!  
**Neil Thomas**  
**EXECUTIVE DIRECTOR**

## EMPLOYMENT OF GREENKEEPERS

The Association is in the course of setting up an Employment Agency Scheme which will operate on lines similar to any such agency, i.e. it will seek to match the potential employee with the employer registering a vacancy.

Obviously, this particular scheme will be specialist in the sense that its sole aim will be to match greenkeepers with golf clubs registering vacancies. It will assist greenkeepers in automatically registering their interest with golf clubs where their qualifications, experience and stipulations match the club's requirements and will equally be of assistance to golf clubs in saving them both time and expense in finding a suitable greenkeeper to meet their circumstances.

From the greenkeeper's viewpoint, the scheme will operate as follows:-

1) Completion of Application Form by greenkeeper and submission to BIGGA.

2) Completion of Vacancy Notification by golf club.

3) Matching of likely candidates with vacancy by Headquarters Office.

4) Summary details of likely candidates forwarded to golf club for consideration. At this stage name, address, present and previous employment and reference details will be omitted to protect confidentiality.

5) Golf club indicates candidates it wishes to consider for short listing.

6) Headquarters confirms with candidates that they wish to be considered for the vacancy in question

7) Upon receipt of this confirmation, full details of candidates are forwarded to golf club.

8) Golf club confirms short list.

9) Headquarters finalises interview arrangements in conjunction with club and short listed candidates

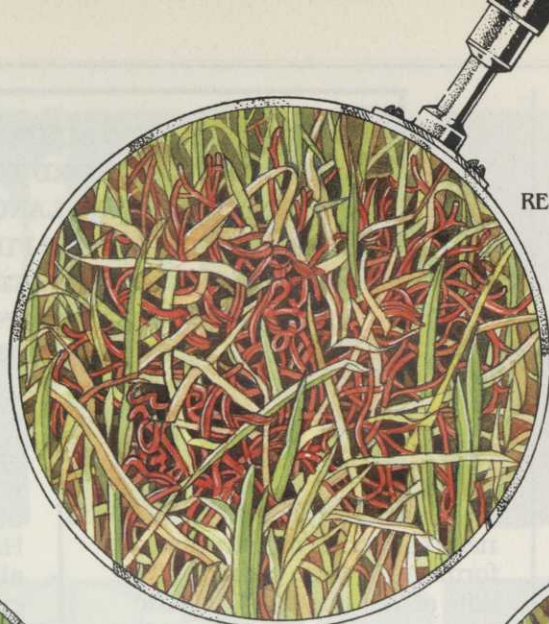
10) Club advises Headquarters of result of interviews.

At all times there will be maximum confidentiality. There will be no charge to greenkeeper members for use of the service. There are two packages available to the golf clubs.

First, an all-inclusive fee will be payable for each successful placement.

As an alternative, there will be a 'Greenkeeper Package'. This will provide clubs with access to the Employment Agency Scheme but in addition advice and guidance on greenkeeper matters will be provided by the Association when sought by a club. This will cover such matters as Contracts of Employment, Conditions of Service, Health and Safety at Work Act, as well as salary considerations and general greenkeeping staff matters. The scheme aims to promote a close working relationship between the Association and the clubs concerned with consequential long-term benefits for





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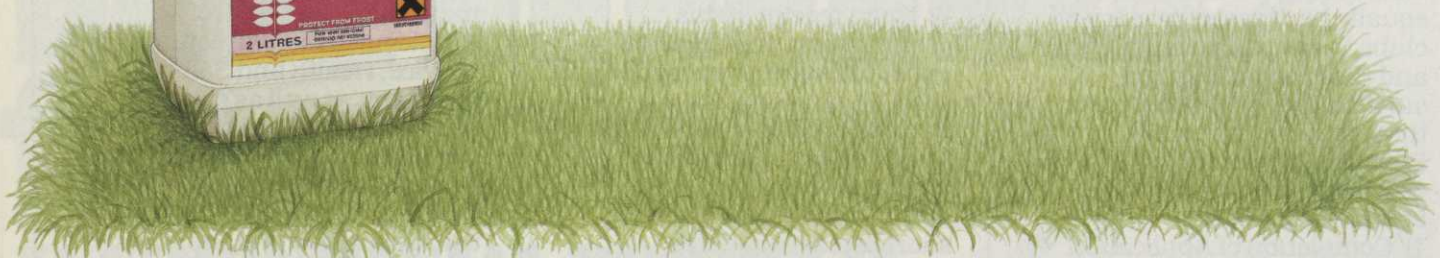
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To find out more about the cost-effective range of Ransomes grass machinery contact your local dealer or write to us.

**RANSOMES**





# ISEKI

## The hunt is on to find Britain's best golfing greenkeeper

ISEKI'S Sponsorship of the BIGGA (Regional Tournament) has gone a long way to bringing together the very best of golfing greenkeepers. With two superb regional rounds being played in Yorkshire and Scotland and full fields being reported from each round. Three further rounds are scheduled to take place towards the end of June at Long Ashton in Bristol, Tewkesbury and Wentworth. From these five regional rounds the first four players in each category go forward to the National Final, which is being played over 27 holes of medal play at the St Pierre Golf Club in Chepstow in Gwent on August 19th. Judging from the enthusiasm for the tournament at both Moor Allerton and Hilton Park near Glasgow, it seems that not only players, but a number of their friends and supporters will be travelling to the famous St Pierre Club for what promises to be a very exciting day of competitive golf.

The Northern Regional rounds took place at the testing Moor Allerton Course, just to the west of Leeds, at the end of May with a full field of 60 competitors taking part in all three categories. The undoubted highlight of the day was the 72 nett 68 posted by Ian Farrell of the Heswell Golf Club who played magnificently on what was a very windy and long course. Moor Allerton known for its associations with both the Carcare and other PGA tournaments in recent years proved a very testing course for all of the greenkeepers involved, and Ian Farrell's 68 meant he qualified for the final at St Pierre ahead of Edwin Walsh of Whitefield Golf Club, and Roy Ullerthorpe of Scunthorpe.

Further down the order Mick Lealman of Strensall Golf Club took the second category while Gordon Brammah of Hallamshire Golf Club took the third category. Both played remarkably

good golf over a very difficult course.

At the beginning of June the second tournament took place at the Hilton Park Golf Course to the west of Glasgow and again this proved to be both a testing and very competitive day's golf for all concerned. Sixty players from all over Scotland travelled to the regional final at Hilton Park with Chris Kennedy coincidentally the regional administrator playing marvelously to record a 77 nett 69 to win the first category. There was a tie for second place which resulted in C. White of Largs in Ayrshire taking second place on a countback ahead of V. Read of Castle Douglas both recording net 72 on this very sunny but blustery day. In the second category John Geddes of Aberdeen recorded a net 70 playing off a handicap of 12 to be three strokes ahead of his nearest rival. Whilst in category three, Renfrew's J. Gray recorded a net 71 playing off the handicap of 24 to lead home his nearest rival by two strokes and qualify as well.

It has become apparent that the purely social side of the Iseki Tournament is interesting for everyone concerned, with David Goulding an administrator of BIGGA, commenting on the difficulty he had prising the competitors away to dinner when they were all so engrossed on talking about their own golf greenkeeping problems. Overall these first two rounds of the Iseki Tournament have shown a new professionalism in both course appearance and display from Iseki, and the new found extremely professional way in which the tournaments themselves are organised by BIGGA. The next three rounds promise to be just as competitive and on August 19th all the twelve qualifiers from each of the five regional rounds go forward to what promises to be a very exciting day at St. Pierre.

greenkeepers and greenkeeping. Clubs will be advised that the main priority of the new Association is directed towards greenkeeper education and the speed of development and progress in this key area will be dependent on the funding available. In using this service, they will be making a direct contribution towards enhancing greenkeeper education. Income realised by the Association from clubs using the scheme will be directed towards improving the education and training facilities available to

greenkeepers. This in turn will benefit clubs in the longer-term with better qualified greenkeepers being available for employment. Please remember that to make a success of this scheme from both the employer and employee viewpoints, it is essential that all members registering adopt at all times a professional approach, not only in completing the Registration Form but in relation also to interview procedures and, of course, in their subsequent dealings with the club if successful with their

application. If you are interested in changing jobs in the short, medium or long-term, please complete the Registration Form enclosed with this edition of 'the Golf Course' and return it to Headquarters Office without delay. The success of the scheme is dependent on the response by members in the first instance and the sooner that response is forthcoming the better, in order that an operative date can be set.

**Nell Thomas**  
Executive Director



# BRITISH AND INTERNATIONAL GOLF GREENKEEPERS ASSOCIATION



## 1988 GREENKEEPER MEMBERSHIP APPLICATION FORM (NB Not to be completed by 1987 members)

To be returned to:- The Executive Director, BIGGA Sports Turf Research Institute, Bingley,  
West Yorkshire. BD16 1AU

Full Name: \_\_\_\_\_ Home address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Date of birth: \_\_\_\_\_ Postcode: \_\_\_\_\_

Name of employer: \_\_\_\_\_ Address: \_\_\_\_\_

Present post: \_\_\_\_\_ Date of appointment: \_\_\_\_\_

Professional qualifications: \_\_\_\_\_

I wish to be affiliated to the \_\_\_\_\_ (Section (see below))

I HEREBY APPLY FOR MEMBERSHIP OF THE BRITISH AND INTERNATIONAL GOLF GREENKEEPERS  
ASSOCIATION AND AGREE TO ABIDE BY THE CONSTITUTION AND RULES OF THE ASSOCIATION.

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_

Subscriptions are NOT to be sent with this form but will be invoiced separately.

Fees payable will be: (1) Full member £25.00  
(2) 18 years of age and under £12.50

**Sections:**

Scottish region	:North, East, West, Central, Ayrshire
Northern England region	:North East, North West, Northern, Cleveland, Sheffield
Midland and North Wales	:East Midland, Midland, East of England, Mid Anglia
	:Berks/Bucks/Oxon
South East	:East Anglia, Greater London, Surrey, Sussex, Kent
South West and South Wales	:South Coast, Devon and Cornwall, South West, South Wales



# BRITISH AND INTERNATIONAL GOLF GREENKEEPERS ASSOCIATION

## 1988 ASSOCIATE AND TRADE MEMBERSHIP APPLICATION FORM (NB Not to be completed by Trade and Associate members who joined during 1987)

To be returned to:- The Executive Director, BIGGA, Sports Turf Research Institute,  
Bingley, West Yorkshire. BD16 1AU

Full name: \_\_\_\_\_ Home address: \_\_\_\_\_

Telephone: \_\_\_\_\_

Postcode: \_\_\_\_\_

Name of company (where appropriate)

Preferred mailing address:

Position: \_\_\_\_\_ Postcode: \_\_\_\_\_

Categories	B. 1.	Associate member	£25.00
	B. 2.	Associate member including subscription to 'the Golf Course' for 1 year	£43.00
	C. 1.	Trade member	£30.00
	C. 2.	Trade member including subscription to 'the Golf Course' for 1 year	£48.00

I HEREBY APPLY FOR MEMBERSHIP OF THE BRITISH AND INTERNATIONAL GOLF GREENKEEPERS  
ASSOCIATION AND AGREE TO ABIDE BY THE CONSTITUTION AND RULES OF THE ASSOCIATION.

I wish to join as \_\_\_\_\_ Member in Category \_\_\_\_\_  
and I enclose my cheque as indicated above in the sum of £ \_\_\_\_\_ made payable to BIGGA.  
A receipt will not be issued unless specifically requested.

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_



# FACE TO FACE

THE formation of the Board of Greenkeeping Research at Bingley in 1929 heralded the start of advisory services aimed at British golf courses.

The over-use of lime and fertilisers in the Twenties had caused devastation on hundreds of courses. As a result there was a ready market for the new service, but as the crisis eased it became obvious that golf clubs, sadly lacking leadership by their unions, would not continue their support.

In 1951 the organisation became the Sports Turf Research Institute, offering advisory services and research facilities to ALL sports played on turf. The major supporter then was the Football Association. Golf received little benefit because, although it dominated the Board of Management, it also failed to contribute to research funds.

Yet problems on golf courses were multiplying rapidly. Levels of play had risen dramatically, but levels of aeration did not keep pace and the power of chemicals, fertilisers and irrigation systems all rose sharply. The national and county unions, as representatives of all British golfers, have still not risen from their slumbers, but the Royal and Ancient Golf Club have made considerable contributions to research into golf course problems and Mr. Jim Arthur, in the course of lightening his load, generously handed over a large slice of his business to the STRI without payment.

## challenge

On a recent visit to Bingley I was able to see for myself how the challenge is being met and to talk to the Assistant Director (Advisory Services) Jeff Perris,

and also to David Stansfield who is now advising the Championship Committee of the R & A on the preparation for Open Championships of Royal Lytham, Royal St. Georges and Royal Birkdale.

## specialist advisers

Is there now a Golf Unit with advisers specialising purely in golf courses? Very much so, and in fact it consists of no fewer than six experienced men: Jeff Perris, David Stansfield, David Boocock, Stewart Ormondroyd, Jonathan Tucker and the Director, Peter Hayes, all concentrate their efforts in this field, with others helping out when the pressure is on. This body of specialised expertise has grown rapidly and is still growing to meet demand.

We argued briefly as to whether this service is sufficiently publicised. I am not convinced that the STRI does enough to sell itself, but care is needed to ensure that it does not become too linked with commerce. It may be that the Board of Management should consider a more imaginative approach, but, as ever, the best form of advertisement is to do a good job for the customer.

The policy of presenting seminars in different parts of the country has been very successful, with over fifteen hundred delegates from many clubs taking part.

Leaflets detailing services are now being distributed by the STRI and the most recent quarterly edition of that excellent publication, the Sports Turf Bulletin, is devoted entirely to golf courses.

## greater interest

There is now much greater interest in advisory visits at most clubs, usually with attendance by several members of the club management. Jeff commented: "We are not afraid to say that we are the experts, come to us with your problems and we hope we know most of the answers - nobody can yet claim to know ALL the answers".

That led me to ask one of the tougher questions. What was their view of unqualified

# Eddie Park talks to Jeff Perris and David Stansfield of the STRI

advisers or salesmen posing as advisers? A mixed blessing in general: "It's usually OK - if they stick to spreading knowledge of the product they are selling, but some step outside their product knowledge into areas where they have neither the education, knowledge or experience to give useful or positive advice." Strong words, but amply justified in the opinion of many observers.

Of course all professional groups have the odd charlatan, and anyway, how do we define a qualified agronomist? All new recruits at Bingley in the past ten years have been University graduates with degrees in some branch of the natural sciences, biology, agriculture, ecology etc, but less frequently nowadays in horticulture. The practicalities of turf science can only be learned by going out on the job and suggestions that a National Turfgrass Diploma alone would be sufficient are discounted.

## recommended

The recommended approach is NOT to tell greenkeepers what to do, but rather to suggest a broad policy which will have the most chance of success in the particular environment of the course in question. The setting of targets for possible achievement and for staffing and machinery levels produce a framework within which individual greenkeepers can develop their own methods. Speaking for myself, I would add the requirement to check that all working practices actually achieve their required objectives.

A frequent observation is that individual greenkeepers (other than real veterans) may lack the breadth of experience of all types of golfing habitats to know, without experiment,



which methods work best and where. The qualified agronomist has the depth of scientific knowledge to relate to the large variety of sites and the extra advantage that he is seeing the whole range all the time.

Apart from the differing requirements of different sites, the experience of seeing so many courses develops an awareness of differing levels of play and leads to further variations of the advice given. It all seems a far cry from the old Bingley reports of twenty years ago which seemed to be the same for all courses.

### **pertinent**

Jeff made another pertinent point: "It is really very sad that most of today's problems are self-inflicted. In spite of better education and awareness in golf, the mistakes made stem usually from club authorities, much more rarely from the greenkeeper. It is not possible to condemn the man with 100% *Poa annua* greens when you know that the main contributory factor is the pressure from members to mow too closely. That does not alter the fact that *Poa annua* must always be a most unstable system for golf courses."

That took us on to the question of grass populations and agreement that the ideal surface for golf would be pure fescue, but, on the average golf course site, if you can achieve more than 60% *agrostis*, spread evenly through the green, you are doing very well indeed. Both men had further thoughts on fescues. David thought that "the chief site for this grass on greens is on limestone heaths and links, which are both free-draining and with a high pH. It is rare to find it on the more acid sites."

Jeff said: "I have a wish regarding fescue turf which stems from two new courses I advise, both on the Continent. Both have a free-draining construction geared to the encouragement of fescue and both were sown to pure fescue (in fact a 50:50 mix of Slender red and Chewings). The chemical Methabenzthiazuron was used to keep out *Poa annua* (it discourages *Agrostis* as well). I wish

## **"Club politics are absolutely disastrous as far as golf courses are concerned"**

somebody would have a bash at that in Britain but nowadays there would be some difficulties with pesticide legislation."

I seem to remember that the early work with this chemical was done at Bingley in the Seventies with a view to control of *Poa annua*, but it was felt that golfers preferred a mixture of *Agrostis/Festuca*. It has to be stressed that this system could only be successful if the underlying drainage and construction is good."

Of course, this again illustrates the point made by many greenkeepers that many problems in this country are the result of old-fashioned design and construction not geared to the modern all-year-round demand for play. Unhappily, some new constructions in recent years have not proved to be any improvement.

### **feasibility study**

Increasingly the golf unit receives enquiries about the feasibility of new golf course sites. ("It is nice if we are asked in BEFORE a disaster is built"). Unfortunately the feasibility study is often the end of the STRI involvement.

An architect is appointed, draws up plans and says he will supervise the construction himself. David remarked: "That is not always the ideal way to produce a guaranteed end product. New designs must be manageable and fit the site conditions, as well as having architectural merit, and both aspects must be given equal attention in order to produce the best end result".

Jeff had some more general points to make about problems, starting with the commonest one, that far too frequently committees with nil expertise insist that they know best. "But

I sometimes think that a greenkeeper is his own worst enemy. A good greenkeeper has four main attributes, not only good theoretical knowledge and good practical skills, but nowadays he will also need good management skills and, especially, good skills in communication. It is on these last two points that many fall down. They know how to manage their course inside-out, but do not possess sufficient skill in managing and motivating their staff, or good enough abilities in organisation, budgeting and, above all, in communication. They must THEMSELVES create a climate in the club where all members automatically think of the head greenkeeper as the number one person to consult about the course."

### **crisis to crisis**

Jeff continued: "David and I both have experience of good greenkeepers who, if left alone, could manage their courses to a high standard, but they fail to communicate adequately with both committees and members, are interfered with, become discouraged and disillusioned and simply settle for doing as they are told. From then on it is a progression from crisis to crisis."

David felt even more strongly: "Club politics are absolutely disastrous as far as golf courses are concerned! The question is what to do, for those politics will not just go away. In fact they are getting worse. Nowadays there can even be a crisis about not strimming round the tee markers!"

As you may have gathered I enjoyed my discussion with these knowledgeable and realistic men. The interview was lengthy and deserves a little more space next month!

# **FACE TO FACE**



# GOLF COURSE IMPROVEMENTS IN THE LAST THIRTY YEARS

**A report prepared by the Greenkeeping  
Winter Fact Finding Committee at  
Dundee College of Further Education**

FROM the players' point of view, more and more golfers are looking for 12 months of play on a golf course kept in reasonable condition. More winter golf is being played now than ever before.

It is up to every greenkeeper to strive to give the best possible conditions throughout the year, within the bounds of the budget provided and his own ability.

While there have been many definite improvements in education within the greenkeeping profession in the last 30 years, there is still a need to improve the status of greenkeepers.

In an effort to improve the standard of advice from consultants it has been said that consultants should have degrees in agriculture to be better able to understand turf management. Those present felt that the possession of a National Diploma in Turf (NDT) would be better for the consultants, and indirectly, for their clients.

Golfers themselves need more education in how to use a golf course sensibly. Good golf course etiquette is essential in these days of increased use of courses. The meeting felt that associations such as BIGGA could do much to help put over this message more firmly. This would improve still further the players' attitude to golf.

Thirty years ago mistakes were made in the design of new courses and with alterations to existing courses. Many of the

problems created then still exist today.

Improvements which have occurred or arisen as a result of recognising these mistakes:

- Choosing only land which is suitable for golf in the first place.
- Taking short cuts (eg. building to the lowest price) should no longer, be considered the best policy, automatically.
- Better golf course architects are available.
- Using more land for each course - 150-200 acres instead of 90-100 acres.
- Larger tees, designed with the greenkeeper and maintenance in mind.
- Avoiding narrow walk-off areas between greens and tees which lead to unwanted worn and bare areas.
- Recognising that flat greens and tees are not necessarily desirable.
- Using stronger and more visible bunkering.
- Abandoning clay bowl constructed greens - 'Dew pond greens'.
- Using better drainage techniques and 'know-how'.

It was recognised that golfers play more slowly now, but this may be due in part to congestion on the course. The newest courses to be built are being

designed to be a little shorter than those built in the 60's and 70's when the emphasis was on length. This could help to speed play.

The playing speed of the ball was also considered. Badly used pop-up sprinklers on greens lead to a slower putting surface.

More desirable, faster putting surfaces have been achieved by:

- Encouraging a predominance of fescue and bent in greens.
- Regular verticutting.
- Increased and more careful use of top dressing.
- Producing drier surfaces by regular spiking.
- Cutting more closely and more often when weather conditions allow it.

The suggestion that Annual Meadow Grass (AMG) had now been relegated to the status of a weed and therefore, unwanted, was now widely accepted. However there are still some greenkeepers who feel that its presence as a tough persistent grass can still be tolerated.

Cultural methods have changed over the last 30 years, in fact quite recently, to discourage invasion from AMG on golf greens:

- Fertilisers containing no phosphate are used.
- Overall reduction in the use of fertilisers.
- Regular spiking and



verticutting.

- Use of less water.
- Encouragement of acidic conditions (but not over acidic).

It was pointed out that by using wetting agents before AMG flowers appear, followed by a back-up application 14 days later, there would be a noticeable reduction in flowering heads.

One suggestion was to apply Farmura Green at the general rate of 1 gallon per average sized green, before AMG flowers appear, and 14 days later, apply Aquagro at 2oz/110sq yards.

It is the unsightliness of the AMG flower heads which makes its presence so unwanted. Without the flower heads its presence may still be tolerated over the next thirty years.

In the last five years the problem of thatch has become less pronounced than 20 years

ago. This is probably due to:

- Improved slitting treatments - much higher frequency.
- Better use of irrigation - linked with a better understanding of AMG control - too much water is thought to be the culprit for encouraging both thatch formation and AMG development.
- Use of improved top dressings, containing less peat.

As already stated it was agreed that over-watering is the biggest cause of thatch and AMG. The application of water is still required, but its use should be left to the head greenkeeper's discretion.

In recent years the spread of patterns of sprinklers has been studied more closely, which has led to improved watering systems being introduced.

This has been linked with better systems for measuring the amount of water applied. Used in conjunction with soil tensiometers this should ensure that water is applied only when required and in the right amounts.

Hand watering of high areas, particularly on greens, but also on other parts of the golf course, is still recommended even although standing with an open ended hose is time consuming.

The use of wetting agents has increased in recent years. Their use reduces the amount of water requiring to be applied to get sufficient water to the grass roots.

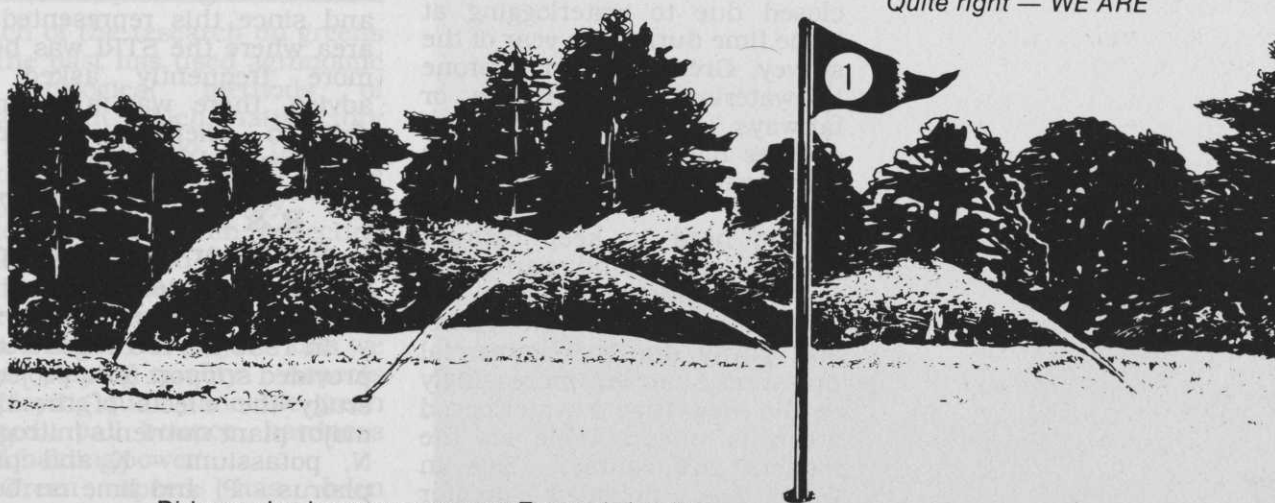
A note of caution was sounded. There is still not enough known about the long term effects on turf and soil organisms of the use of wetting agents.

**If you would like to join the committee, they can be contacted at Dundee College.**

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# RESEARCH UPDATE

## The search for the PERFECT green

by  
**P M Canaway**  
of the  
**STRI**

THE game of golf has its origins on the coastal links of Scotland. The original links greens consisted of fine bent and fescue species established on naturally occurring freely drained coastal sand. The game gradually spread inland and golf course architects made use of the indigenous soils available. Some of these were suitable and in some ways similar to the links soils, being of low productivity and to which bents and fescues were well adapted. Others were developed on heavy pasture-type soils more suited to beef production than the production of a golf course.

In this country the most important factor limiting the use of courses is the inability of most naturally occurring soils to transmit water away from the surface at a sufficient rate. This, combined with the effects of play on soil structure, notably soil compaction, means that many greens are unfit for play due to waterlogging during periods of heavy or prolonged rainfall.

In 1981 my former colleague, Caroline Ward, carried out a questionnaire survey of drainage on golf courses and found that 70% of courses were closed due to waterlogging at some time during the year of the survey. Greens were more prone to waterlogging than tees or fairways and over 80% of courses had at least one green with drainage problems of some kind.

The need to keep courses open all year round, partly due to public demand and the general interest in the game, and partly due to commercial pressures, has led increasingly to the view that a waterlogged green is unacceptable on the modern golf course. This in turn has provided greater impetus for the use of sand-based rootzones for golf green construction. By 'sand based' is meant a rootzone having a high preponderance of sand, either sand only, or sand mixed with soil and/or organic matter.

Whichever variant is used the objective is to provide a free-draining surface and good playing conditions, regardless of rainfall.

### **Problems of fertiliser nutrition and sand-based rootzones**

Because sand-based rootzones are so free draining, it means that soluble fertilisers, especially nitrogen and potassium, are readily leached through the rootzone by rainfall or excess irrigation water. This, together with the inherent low nutrient status of sands, means that fertiliser nutrition can be a problem. Also, the pH (acidity/alkalinity) of sand greens can be a cause of concern since sands have little buffering capacity. The use of acid-reacting fertilisers such as ammonium sulphate can cause pH to fall rapidly to low levels. Consequently, light but frequent liming has been suggested to counteract this tendency. However the use of slightly alkaline top dressing materials is more likely to be desirable in view of some of the deleterious consequences of lime application to bent/fescue turf. These include disease, particularly take-all patch, and invasion by annual meadow-grass. There has been little previous work done in the UK on the effects of fertilisers on sand-based greens prior to 1985 and since this represented an area where the STRI was being more frequently asked for advice, there was a potential gap in scientific knowledge which needed to be filled.

### **R & A support for fertiliser research on sand-based greens**

In 1985 the R & A generously provided support for a project to study the effects of the three major plant nutrients (nitrogen - N, potassium - K and phosphorus - P) and lime on bent/fescue turf grown on a sand-based golf green construction. Much of the initial expense was on construction of the trial area, which was completed during the summer of 1985. Operations were similar to



those in construction of a new golf green, with the eventual rootzone consisting of a very clean, lime-free, quarried sand to which 10% by volume of peat was added to aid moisture retention. There was considerable debate during the planning stages as to whether we should use a sand-only or a sand-soil type of construction. Indeed, this is a controversial issue which has rumbled on in the USA for many years. However, in research, in the early stages of any investigation it is always sensible to look at the extreme situations first - in this case sand-only - where problems of nutrient leaching and inherent lack of nutrients are at their most severe because of the free movement of water through the rootzone. The area was prepared and seeded in August 1985 with an 80:20 mixture of 'Frida' Chewings fescue and 'Highland' browntop bent.

In 1986 the experimental fertiliser treatments started, and these included three rates of N, P and K, with and without lime, in all possible combinations of nutrients. The total number of trial plots is 108, which requires considerable time and effort to collect the scientific data, and in summer 1986 Tim Colclough was appointed to take over the day to day running of the R & A trial.

### Playing quality

Much of the research on greens in the past has used agronomic or ecological methods of assessment which, satisfactory as far as they go, do not take into account the needs of the player except indirectly. Tim Colclough has been collecting data not only on ground cover and grass species composition, but also on aspects of the green which affect the player - this we term 'playing quality'. Aspects of playing quality include green 'speed', ball bounce, hardness and 'holding power'.

Green speed has been measured for many years by a device called a Stimp meter after its inventor, Stimpson. This consists of an inclined ramp with a notch at one end which holds the ball. The ramp is laid on the ground and the

end with the ball is gradually raised until a critical angle is reached and the ball rolls down the ramp. The distance rolled by the ball after it leaves the ramp is a measure of green 'speed' and the USGA has published green speeds for different classes of play.

Hardness is measured with an instrument called a Clegg Impact Soil Tester which consists of a 0.5 kg cylindrical hammer containing an accelerometer. The hammer is dropped on the green from a standard height and its deceleration recorded. The greater the deceleration, the harder the green. The figures are given out on a liquid crystal screen display which is connected by a cable to the hammer.

Ball bounce is measured by the release of golf balls from a 5m high ball bounce apparatus and recording the impacts with a video camera. The apparatus has a graduated scale fixed to the stand so that the height of rebound can be easily determined from the video films.

Study of 'holding power' of greens is more complicated since it requires that balls are fired at the greens with realistic speed and spin, and the resulting behavior of the ball studied. Fortunately, another project financed by the R & A is concerned with ball impacts on greens. Steve Haake, who

## RESEARCH UPDATE

works at the STRI but is registered for a PhD at Aston University, has developed equipment for simulating and recording the impacts of balls on greens. The ball is fired out of a specially developed ball-firing machine at about 35 miles per hour with 4500 revs. per minute of backspin (all golf shots correctly hit have backspin) at an angle of 45 degrees. If the speed seems slow compared to the speed off the club head, remember the ball slows considerably throughout its flight due to aerodynamic drag. In the holding power test the distance between initial impact and the next bounce is measured after the ball is fired out as described.

### Findings to date

To date, the effects on grass cover and species composition have been solely due to N, with no effects of P, K or lime. N increased cover and the content of bent, whilst fescue content decreased with N. Both lime and N reduced green speed,

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Ball bounce is tested during an R & A trial



## RESEARCH UPDATE

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although this should be seen in context in that the low N plots were pretty bare and grass cover would not have been acceptable to members or greenkeepers.

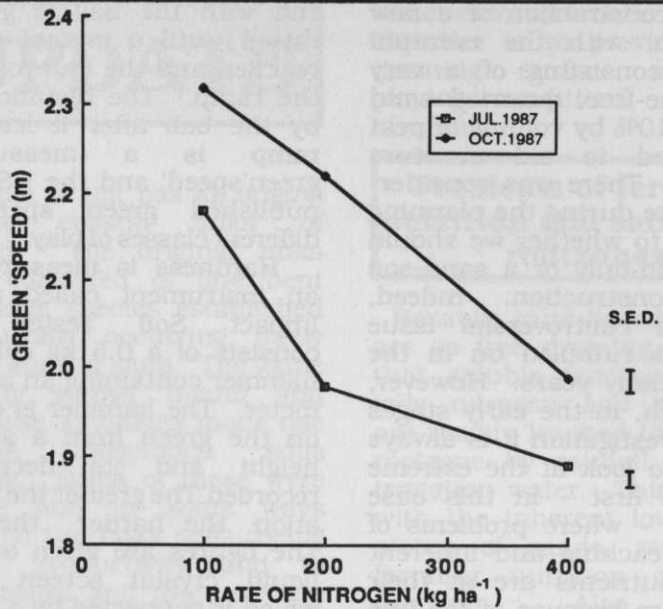
Ball bounce increased with N, producing a more 'springy' turf. There were also significant effects of K, lime and an interaction between lime and N. 'Holding power' or rather bounce length after impact also increased with N - this may be related to ball bounce, but what was more surprising was that there was a significant interaction of N and P. At high N, bounce length decreased with increasing P whereas at low N, bounce length decreased with increasing P.

The conclusions so far show that: (1) at least 20 g/m<sup>2</sup> of pure N is required for healthy growth on sand. (2) Increasing N favours bent at the expense of fescue. (3) Playing quality tests have demonstrated effects of nutrients not detectable by botanical analysis. The ball bounce and 'holding power' tests are a world 'first' in golf green research and their sensitivity and relevance to play make the results even more interesting.

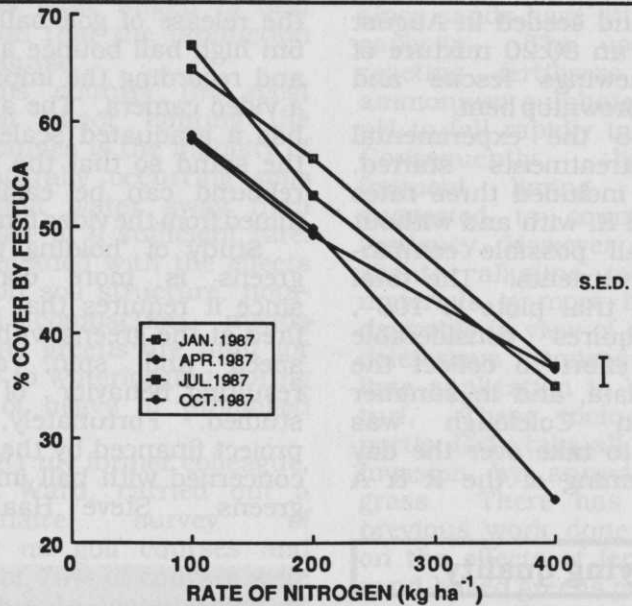
### Looking ahead

The R & A has put up further funds - to the sum of £50,000 per year - and part of these monies will be used for the next stage of the programme which is to look at the interactions between root-zone construction, fertiliser nutrition and irrigation of golf green turf.

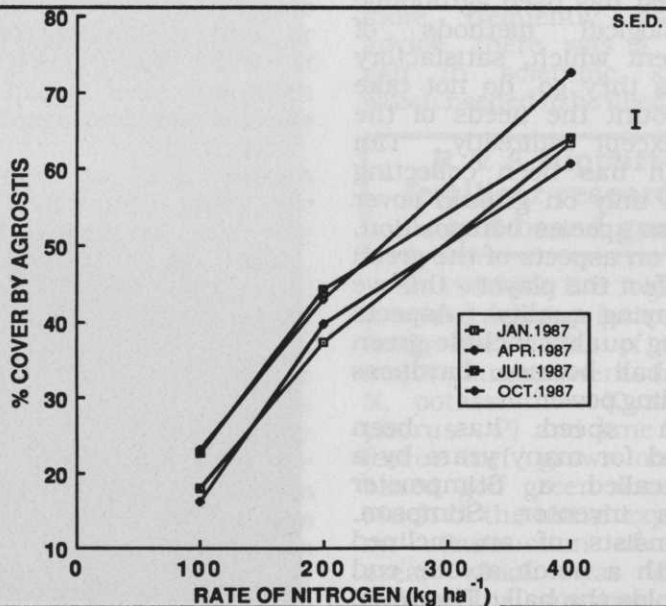
This will include sand, sand/soil, and soil greens and is probably the most complex and ambitious golf experiment ever attempted anywhere in the world. It will include three irrigation regimes and twelve nutrient combinations, as well as the three greens' construction types and will, hopefully, answer many questions about greens construction and maintenance which have been of concern to greenkeepers and agronomists alike.



The response of green 'speed' to fertilizer nitrogen



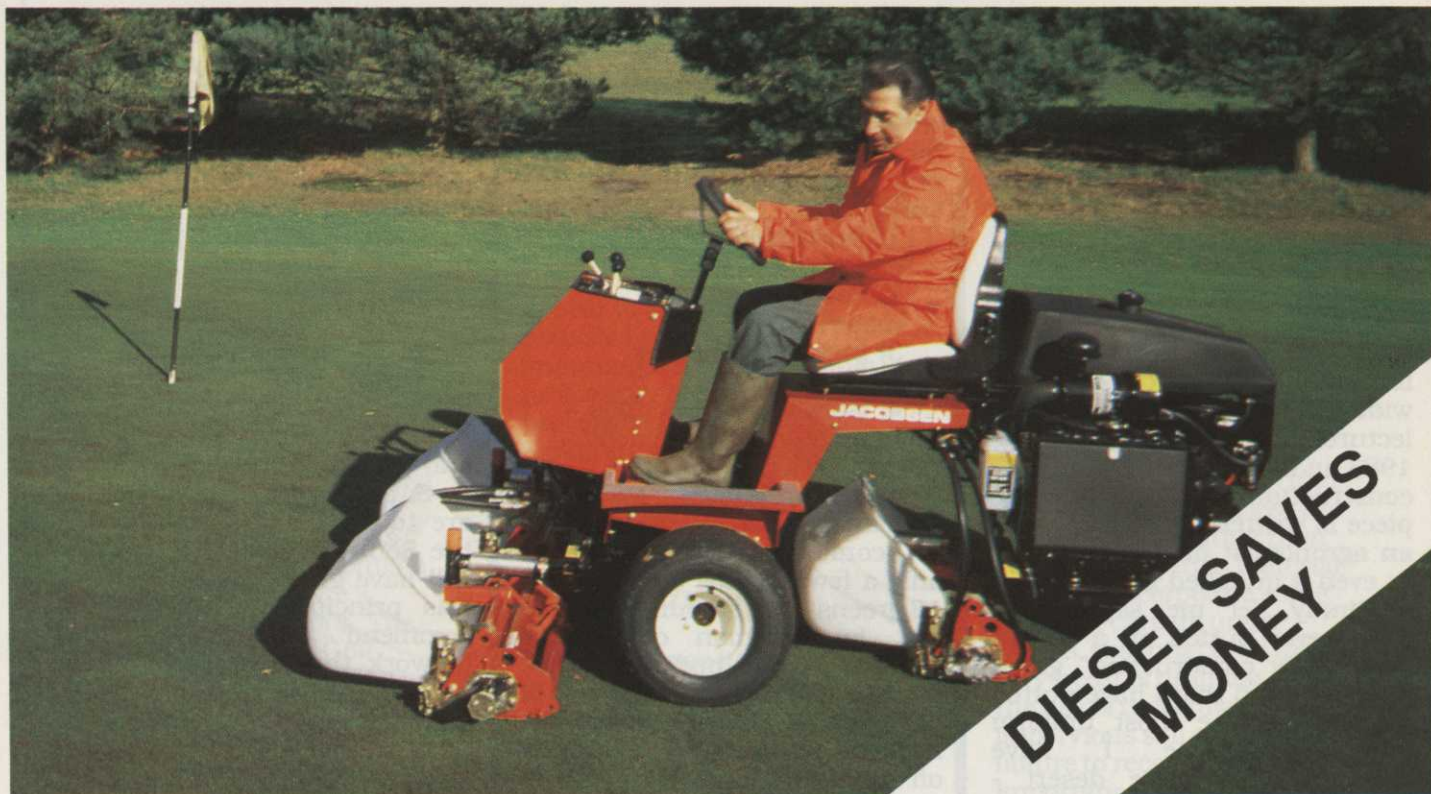
The response of ground cover of *Festuca ssp commutata* to fertilizer nitrogen



The response of ground cover of *Agrostis castellana* to fertilizer nitrogen



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# SAND GREENS

by Michael Coffey

SO much controversy surrounds this subject that some time ago I decided to put my own thoughts down on paper. By publishing them I shall no doubt be accused of being biased, which I am not, and having a little knowledge - which is always a dangerous thing. But I write as I find.

I suppose my judgement must be coloured to some extent for I doubt that anyone country-wide has listened to more talks, lectures, seminars etc since 1983 on the subject of sand only constructions. However, this piece is written by a golfer - not an agronomist or a constructor or even a qualified greenkeeper.

Firstly, let me say that I have never putted on a decent "sand only construction" green in the UK and that I have putted on perhaps the most uniform putting surface I have encountered, in the desert - again sand only construction.

The greens I have come across in the UK have been patchy, even weed infested and the ball behaved as if it hit a tarmac road.

So why when we have other forms of construction which apparently work quite well do people bother with "sand"?

Well, in choosing this form of construction, cost must play a part. But if it doesn't work in the medium to long term it isn't cheap. The case for using the more traditional method of green construction is argued most eloquently by Jim Arthur on page 22 of this issue. I suspect that the main reasons

## a golfer's viewpoint

for the poor end-results in sand-only constructed putting surfaces are:-

- 1) Inexperience of the contractor.
- 2) Poor or unsuitable materials.
- 3) Inexperience of the advisor.
- 4) Isolated constructions. i.e. only one 'replacement' green at a time.
- 5) Inappropriate management.

I confess to having played on only a few courses on which all 18 greens were so built and they are, by common consent, I believe, poorly built and give the head greenkeepers plenty of problems. On the other hand, I have come across several 'one off' constructions, and assured that when the contractor left the sward was perfect bent/fescue, but, that within a relatively short period, the original turf or seeded grass has changed. I assume it must be very difficult to have one management regime for 17 greens and have to adopt an entirely different method for the remaining one. Perhaps this doesn't happen and they all get treated the same.

The other side of the coin is that if you can have a free draining (and surely sand is that) uniform construction that doesn't compact (therefore doesn't need so much aeration which means less surface

disturbance) this must be a good thing. If sand only construction can cope with more traffic, but is more expensive to maintain, never mind! More golfers on good surfaces will create more revenue.

The STRI are part way through research on this subject, funded by the R & A, and Mike Canaway has written an article explaining what has happened so far, but I deliberately wrote this piece prior to reading Mike's article and the STRI's findings to date.

Sand green constructions are to have a further boost as the South course at Wentworth will have greens constructed on this principle. This I wholly commend - for if this system is to work then there can be no better true "trial plot" and testing ground than at Wentworth. The course has as its advisors the STRI, the specification for the construction has been approved by them, so Wentworth have the best advice available. In Kevin Munt, Wentworth have an exceptional course manager who believes totally in the concept. Kevin has promised that his management programme and statistical records will be made public. So, hopefully, during 1989 we will have even more information both from the STRI and Wentworth.

Sand-only green construction is a fact, and like it or not, it will not go away - but perhaps in the meantime it is better to use the devil you know rather than the devil under research.

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# GOLF COURSE CONSTRUCTION

by Brian Pierson

THE golf course construction industry is enjoying a boom at the present time, unlike anything that has happened since about 1973. The influence of television and increasing leisure hours, together with the interest for outdoor activities, has sparked a revolution in the requirement for new courses. The industry now has to adjust itself from the doldrums to a very buoyant market; this is affecting not only agronomists and architects but more particularly contractors. The British Association of Golf Course Constructors which was formed some six or seven years ago, has been striving for improved construction techniques and quality of work and, whilst we have lived through a very competitive period, we now find ourselves in a situation where there are more projects than the industry has suitable construction managers, the very back-bone of our industry, to cope with the work. This increase in demand is very likely to cause considerable problems. It is difficult to bring on and train construction managers when the industry is in low spirits. My company, however, has been particularly fortunate in that we have had a very strong presence in the golf world and have had the good fortune, because we have had contracts, to train young men.

## a limit

There is, however, a limit to the number of suitable people to be allowed to be put in charge of a golf course. Whilst looking at the industry with considerable interest and enthusiasm, my feelings are tempered with fears of concern with, what I am quite confident will be poor golf course construction at certain levels. The NTC under the very capable

chairmanship of Howard Swan, recently held a seminar to put over the message to the farming community (which would appear to be the biggest potential customer) the importance of using not only professionals but of taking professional advice and of tackling the entire concept of a new golf course, in a thoroughly professional manner.

## successful

The conference itself was a great success; the only regret, I think shared by most delegates, was that we had so few farmers in attendance. However, hopefully the farming press together with our own magazine outlets will spread the word over the next few weeks. We now have the situation where golf courses are to be built and the ever recurring question is raised of what material do we use to build the greens? It would be so simple for all of us in the industry if there were a simple answer. The make up of green construction has been discussed repeatedly year upon year. The tendency to follow the Americans in all aspects of golf is on the one hand a natural progression, but one should remember and if I may quote Jim Arthur on this "they have a climate, we have weather". The STRI are currently undertaking trials on sand green bases funded by the R & A and this is obviously a very important step forward. Whether it proves once and for all that sand greens are not the answer to UK golf or conversely that with careful management, the correct materials, greenkeepers trained in the methods of amelioration and fertilization, that there is a place for sand greens, only time will tell. My involvement in golf spans some

22 years, a very short time in the fullness of the scheme of things, but sufficient time to reflect on past failures and successes. I have been involved in the construction or alteration of over 100 golf courses during that period and, without exception, the only problems that have been experienced have fallen into the following categories: the use of local soil rather than specialist imported material; failure to incorporate stone drainage carpets under greens, essential in all but the very freest of draining sites; the use of turf grown on impervious soil and the failure to recognise the importance of irrigation when constructing free-draining golf greens.

## backing off!

It is quite obvious to the reader that at this point I am backing off the contentious subject of sand greens! Very simply, it is because I do not feel I have enough experience or am technically qualified to pass judgement. During my construction career we have consistently used a sand/soil/peat mix based on deposits of soil from the Norfolk area mixed with local sharp sand. In the early 70's we were thinking in terms of a 50/50 mix and over the last decade have in fact increased the proportion of sand to 70/30. We constructed over 100 golf greens last year using this method and are confident that we will enjoy the same success as we have achieved over many years using this type of construction.

It is, however, time the industry generally, looked at possible alternatives and it is only by experimentation that a clear view of the way forward can be accessed.



# Land of the Long White Cloud



AETERO, pronounced (a-er-t-er-ro-er), is the Maori word for New Zealand and means the Land of the Long White Cloud. New Zealand, with its population of 3.3 million, and 70 million sheep has more golf courses per head of population than any other country in the world. North Island, with its capital of New Zealand, windy Wellington, has a sub-tropical climate to the north of Auckland.

Auckland Golf Club is possibly the most prestigious, where a visitor can only play in the company of a member, and where membership fees are the most expensive in the country. The course superintendent, Laurie Cochrane, who has only recently taken up the post, has a big reconstruction programme ahead. The sand green construction programme has already started, and it is planned to complete three greens every summer with Penncross.

A sand turf nursery supplies all the turf for the greens. The nursery is presently 1,500 square metres, and will be increased to 2,100 next autumn. Once turf has been removed from the nursery, re-sowing can be easily effected using an

undersowing operation. The root mat from the previous crop binds the sand surface sufficiently for grooves to be cut, into which the seed falls. Penncross turf seems well suited to the hot summers and warm winters of Auckland. Temperatures rarely fall below the 40s Fahrenheit and frosts, if any, disappear very early in the morning. Most courses in New Zealand have greens with a Brown Top and Penncross mixture and some suffer Poa invasion. Water for both greens and tees at Auckland is drawn from a large pond located on the course, which is supplied with water piped from an underground water hole. Virtually all courses are cut using triplex machines, mainly Toro and Jacobson. Pedestrian machines are rarely seen, due to an insufficiency of labour. Cutting height ranged between 3 and 4 millimeters.

## Welcomed

I was made most welcome at Auckland by the secretary, John Hutt, who showed me round the impressive clubhouse. I was interested to learn that, in order to become captain of the club, a member

## Above: Queenstown Golf Club

must serve 12 years on the committee. Not only status, but age, count for becoming captain. The club has been host to the New Zealand Open, but due to the present programme of course works, it will be at least five years before it does so again.

North Island has some very picturesque courses, none more so than Waitangi, which overlooks the Pacific Ocean, and from which the views are breathtaking. Titirangi, which hosts the Air New Zealand/Shell Open, was described by the American professional Al Geiberger as "the longest short course" he had ever played. It is in a beautiful location surrounded by magnificent areas of native trees and shrubs, and is rich in bird life.

The Bay of Plenty, the centre of the province of Rotorua, is a spectacular thermal area, where Arikikapakapa course (known as Whaka) has extinct mud pools, and steam vents which sometimes burst unexpectedly into life. Many courses in the North Island have Ponga (Silver Fern)

>>



# AROUND THE GREEN



## BRITISH AND INTERNATIONAL GOLF GREENKEEPERS ASSOCIATION

### SCOTTISH REGION

#### North Section

On Thursday, 19th May the North Section held their Spring Outing at Craigiehill Golf Club, Perth in glorious weather and on a course prepared in excellent condition by Arthur Williamson and his staff.

On a day of very good scoring on such a tricky course, M. McInnes of Nairn Dunbar (17) won the Frew's Handicap Cup with a nett 66, finishing two ahead of D.

Green (6) of Inverurie, S. Sullivan (6) of Craigiehill, D. Robertson (9) of Bon-Accord and R. Hardie (12) of Westhill.

George Paterson of Fortrose playing off two won the Coleman Trophy for Apprentices with his nett 69 (bih) but his boss and mentor George Hampton pipped him for the Bowen Scratch Cup with a 70. The wily old fox also won the putting competition.

Arthur Williamson used his local knowledge to good effect and won the Veterans Cup with a nett 71 off 1. Eddie Connaughton of Soutars retained the Trade Shield.

After the prizegiving, Mr. W. Milton and his wife were

presented with a crystal decanter, two brandy glasses and an inscribed salver by the Captain of Craigiehill Golf Club to mark his 25 years on the Committee of the North Section, most of them as Treasurer or Secretary. Willie, of course, is Head Greenkeeper at Downfield Golf Club in Dundee. We are indebted to Craigiehill Golf Club for the welcome and courtesy extended to us.

The sweepstake being run by the Section on the British Open is going along quite well, but could members still to return books do so as soon as possible especially those who are unable or unwilling to sell them as this will give the Committee and chance to redistribute them. One of our members on the move is C.

MacDonald 1st Assistant at Deeside Golf Club who has been appointed Head Greenkeeper at Newark-on-Trent. Charlie, who only recently got married, takes up his post on 10th June. We wish him and his wife all the best in the future.

These are definitely going to be four spraying courses around the North area for our members in

November avoiding the week of Scotsturf. These will be at Nairn (2), Fraserburgh and Letham Grange. It is also hoped to hold the AGM at Nairn to coincide with on of the courses there and arrange a demonstration and film show with it to attract a larger number. Once the dates are paired up with the venues and details finalised, we will inform the members as soon as possible. The Section has outlaid a substantial sum of money to purchase jerseys, sportshirts, ties and umbrellas which the Secretary has in stock. Any member wishing to purchase any of the above items can telephone him on 0346-26931.

**G. MOIR**

### MIDLANDS AND NORTH WALES REGION

#### East Midland Section

The Spring Golf Tournament was held Thursday, 12th May at Cosby Golf Club, Cosby, Leics. We would like to thank the Committee for extending us the courtesy of their course and Steve Donoghue for presenting the course in such a good condition.

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## AROUND THE GREEN

Our thanks to go Kath and Joan for the cards and raffle, etc: to the companies and friends who donated prizes ; also to the Captain of Cosby, Mr. Bob Clayton, for presenting all our winners with their prizes.

### GREENKEEPERS Nett:-

- 1st M. Billings (65)
- 2nd R. Barker (68)
- 3rd M. Bindley (72)
- 4th S. Donoghue (74)
- 5th R. Allen (75)
- 6th G. Mitchell (76)
- 7th S. Fretter (77)

0-1-9

8th D. Bull (77) 0-1-9

9th G. Arnold (77)

10th N. Danvers (78) 0-1-9

### ASSOCIATE AND TRADE Nett:-

1st J. Barsby (69) 0-1-9

2nd A. Sharpe (69) 0-1-9

3rd I. Willars (69)

The Long Driving was won by R.

Barker, Nearest the Hole S.

Fretter and the Putting

Competition N. Root.

### REARRANGED DATE

Our Autumn Golf Tournament now takes place on Wednesday, 7th September at Kettering Golf Club, Kettering, Northants.

**R.W. WILLARS**

### Midland Section

"Hot July brings cooling showers, apricots and gilly flowers..." so says the Nursery Rhyme, but so far as our next Tournament at Maxstoke Park Golf Club is concerned, we neither want it too hot or too wet! Please remember to enforce dress rules at all our golfing events and let us not see jeans worn on the course again.

Jackets and ties to be worn in the Clubhouse, of course.

New members not yet in possession of entry forms for tournaments may telephone me.

We have not settled on a venue for the Len Breakwell competition, Willesley Park Golf Club were approached but expected us to pay a green feed.

May we wish well to Paul Mytton and anyone else on the move, who has recently left my side at Moor Hall to take up the position of Head Greenkeeper at Caulderfields Golf Club.

I have BIGGA ties in my possession in navy, burgandy and grey. These are for sale at £3.75. I also have details, price lists and order forms for other items of uniform available.

At the time of writing, the Rigby Taylor foursomes matches are hotting up and the results of the second round are as follows:-  
E. Thomas and T. Morris beat D. Brooks and R. Palmer  
I. Toon and P. Woodward beat D. Brazier and J. Randall  
D. Dorrell and A. Luckman beat D. Compton and R. Hammersley  
A. Boraston and A. Boraston beat T. Kelsall and R. Lowe  
S. Wood and T. Jesson beat A. Ryder and N. Woolfrey  
The other two results are as yet unknown.

My apologies to those of you who complain that my notes are too short, but as yet I have not received any items of interest from any of our members. So, for the time being, may all your divots be little ones!

**I.R. TOON**

### SOUTH WEST AND SOUTH WALES REGION

#### South West Section.

On Thursday, 19th May, we held our annual Jacobsen Qualifier at Ashburnham Golf Club. The turnout was good with a total of 28 people attending with only 5 of

Play  
around  
with

**ISEKI**



## AROUND THE GREEN

these being Trade members.

The competition was well-fraught with 4 people breaking par. The Jacobsen Cup for the best nett was won by Paul Hopkins, Ashburnham Golf Club with a score of 67.

The Brown's Shield for the best gross was won by Huw Morgan, Fairwood Golf Club with a score of 77.

The Waycott Cup for the second best nett was won by Philip Swain, St Pierre Golf Club with a score of 68.

### PRIZES

Paul Hopkins won a bottle of whiskey, donated by Ray Burrows of Brown's Bristol.

Huw Morgan won a glove donated by Colin Murphy.

Philip Swain won a bag towel donated by Colin Murphy.

### RAFFLE

John Hopkins, Paul Hopkins, Nigel Owens, Dennis Jones, Dave Mylchreest and Huw Morgan each won a golf ball in the raffle, held to help swell funds.

Qualifiers for Hunstanton on Tuesday, October 11th are Paul Hopkins and Huw Morgan, with

the reserves being Philip Swain and Mike Wilson.

### P. SWAIN

#### South Coast Section

This year's Spring Tournament was held at the West Sussex Golf Club on a beautiful day on a superb course. The course is a real gem with some delightful par 3 holes where the green is guarded by water. Alas, some came to grief at these holes, Peter Marsh managing to hit three successive balls into the water's edge. At the end of the day, the results were as follows:-

Roffey Cup - Lowest net score 36 holes Mark Webb (8), Alresford 71-67-138

Denyer Cup - runner up Phil Ryder (13), North Hants 71-70-141

Tregunna Trophy - lowest gross score 36 holes

Brian Forder (3), Southampton 74-77-151

Rowes Rose Bowl - Runner up Joe Newman (6), Downshire 83-73-157

Nita Stimson Trophy - Lowest Net Score 18 holes (Veterans) Charles Burke (12) Boscombe 85-12-73

Mark and Brian will now represent the Section in the Jacobsen's Greenkeepers Tournament. Trophies and prizes were presented to the winners by Mr. David Holmes of Jacobsens. Thank you David for your support during the day and Keith Jenman of Jenman Engineering. Prizes had been kindly given to the Section by:- Rigby Taylor, Ransomes, Huxleys, Frys of Gosport, Jenman Engineering Services, Synchemicals, Parkers and Jacobsen.

Details of our Autumn Tournament are as follows: Tuesday, 6th September, 1988 Romsey Golf Club Tee-off from 8.30 am Morning 18 hole Foursome Afternoon 18 hole Greensome Entry fee £10.00 per person. Members are invited to bring one guest partner.

Written entries stating names current golf handicaps with the correct remittance should be sent to:-

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# AROUND THE GREEN

Please note that the closing date will be by Monday 29th August, 1988

**J.R. DENNIS**

## **NORTHERN REGION**

### **North -West Section**

The Spring Tournament in May at Tytherington was very well attended by both greenkeepers and their guests. The greenkeepers made their usual excuses about having trouble finding their clubs as they had not seen them since the Autumn Tournament, but went on to return some good scores on this new and very interesting course. Apart from the usual excellent prize table, there was also the added attraction of qualifying for the Iseki Regional Tournament at Moor Allerton on May 24th. Four from each of three categories qualified and they were as follows:- I. Farrell, H. Roberts, M. Sheehan, A. Peel, M. Finney, B. Hashim, B. Scott, P. Harley, S. Moon, B. Moss and P. Leigh. On May 24th, from sixty players at Moor Allerton the best score on the day was from I Farrell of the

North-West Section playing off 4 handicap and returning a 68 nett on a superb but very difficult course. Other qualifiers were S. Moon and P. Leigh.

The qualifiers for the Jacobsen Tournament were the best gross and the best nett from the Spring Tournament, and these were H. Roberts and S. Sheehan. They will play in the finals at Hunstanton on 11th October. Any member wishing to play in the Roses Match against the Northern Section at Blackburn Golf Club on 11th August please contact Bert Cross on 051-724-5412

**B. CROSS**

## **SOUTH EAST REGION**

### **London Section**

I would like to thank all those that contributed to the successful meeting at Bush Hill Park on 1st June. 31 were in attendance, which would have been higher if it had not been for the flush of growth prevalent at the time. Last minute apologies were received. Mike Smith had the course in

good condition.

In the winning frame was P.H. Gibson with 38 points closely followed by Trevor Extoby and S. Everett with 37 and 36 points respectively. The guest prize was won by Stewart McMillan. The longest drive on the 18th fairway by M. Henderson and nearest the hole on the 13th yours truly. Your next golf meeting is at Pinner Hill Golf Club on August 23rd at 4.00 pm.

Incidentally, I have a position left for a lecturer this winter and would like three volunteers, preferably apprentices, to do 15 to 20 minutes each to talk on a subject to suit themselves. Maybe they have something they want to get across. If you think you can do a short piece then pick up the 'phone NOW and give me a ring. I would like to welcome to our Section Mr. Cameroon who has taken on the position of Course Manager at Grimsdyke. Also congratulations to Jeremy Hill for his promotion to Course Manager at Sudbury Golf Club.

**M. PETERS**

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**Above: A short hole at Auckland Golf Club**

<<

growing there, this being the national emblem of New Zealand. These ferns can grow ten metres in height, and are used as fence posts.

Travelling down to South Island, where the climate is very similar to our own. I had the pleasure of meeting several greenkeepers from the Christchurch area, and was invited to accompany them to Lancaster Park, the venue for the first Test Match against England, to see at first hand how a Test Wicket is prepared. Although practices for the preparation of cricket wickets differ from those required for golf greens, the pressures involved in trying to create a perfect surface are very similar to those we know so well in greenkeeping.

### Top courses

Christchurch and Russley are the two top courses, and I was fortunate to be able to play both. I found each had Brown Top greens with a little Poa Annua, which seemed very common throughout the South Island. Richmond Hill, a little nine hole course, was the exception, with fescue/bent greens. The course, built on the side of a hill, had fencing around the greens to keep the sheep off. Interestingly, there were two holes to each green, a red flag in one hole and a yellow in the other, thus creating the 18 holes for the course. Christchurch has the proud

distinction of having Bob Charles as an Honorary Member, this being granted following his victory in the 1963 Open Championship. Russley was in magnificent condition. Walter, the head greenkeeper, has a very comprehensive watering system which is supplied from an old river that runs under the course. The north-west wind that blows in from Australia is a greenkeeper's nightmare. This wind can blow at 30-40mph with temperatures in the 40s Centigrade, which dries everything out in a matter of hours. It then requires days of watering for the course to recover.

### Similar

Greenkeeping practices in the South Island are very similar to our own. The greens are cut with a Triplex (I never saw a pedestrian mower anywhere) to a height of 4mm, and the frequency varying between four and six times a week. Top dressing takes place monthly, mainly with sand, and sprayed with sulphate of ammonia and iron. Wetting agents are used to help prevent dry patch, although some courses do still suffer from this. Moving further South brings you to the Otago Province, which comprises two distinct regions. Around the coast the land is green, and the air moist and misty. Inland from this coastal fringe there is a dry, brown, mountainous upland. Otago has the distinction of being the first Province in

which golf was played. Dunedin was the proud inheritor of the Scottish National Game, and developed there from the early 1870's.

Wanaka and Queenstown stand out as the best of the courses, enjoying clear mountain air and impressive views.

Queenstown has large boulders landscaped around the greens and tees - effective but somewhat hazardous.

Alexandra Golf Club has the unique distinction of never closing, despite experiencing great extremes in temperature. The sandy base provides for rapid drainage, and a complete watering system irrigates the course during the summer scorchers.

In 1932 a group of greenkeepers formed the New Zealand Greenkeepers Association. The formation of this association, its annual conference and a diploma course were all designed to build up the standards and expertise in the industry. Sadly, some 56 years later, the association still faces problems of low membership, and this in spite of a fee of only \$15 (about £6), for which the benefits are numerous. Travelling to New Zealand made me realise that wherever one goes around the world we greenkeepers are all engaged in shaping the future of our profession.

**by Brian Turner,  
chairman of BIGGA's  
Surrey Section**



# The construction of golf greens

WHAT is the best type of construction? To understand this better, it will help to discuss the recent history of green construction on the less than ideal sites which are all that is generally available today. It is rare to be given an ideal links or sandy heathland site for a new course. Generally it is a stretch of heavy agricultural land which is hardly either ideal golfing country, nor particularly well drained naturally.

My involvement in golf course construction goes back to the late 1940s working with that genius of an architect Mackenzie Ross, first in Scotland then in Belgium. There was then a long period when few new courses were built in Britain, until the boom starting in the sixties, when I returned full-time to golf advisory work.

I was horrified at what I found - even in those days I advised that greens sited on heavier land be built on stone carpets, though this was regarded as an expensive and generally unnecessary luxury. The usual method then was to lay down a herring bone drainage system, if anything, topped with local soil, finishing with 2" seed bed compost. No wonder we have so many poor courses with even worse draining greens. Even when stone carpets became more generally used - as opposed to using them only on wet sites, mistake followed mistake. Earth moving equipment was used, with no regard for its destructive effect on soil structures in root zones; churning up approaches and causing insoluble problems with drainage. Even then much too heavy soils were used - always on the grounds of expense. Some of those early courses twenty five years ago were built for under £10,000 - and never was soil imported. Worse still, the wrong 'stone'

was used - and the fatal results of using limestone or lump chalk particularly, on acid heathland sites, was proven when greens had to be lifted and relaid within a few years of construction. The chalk fizzed away quietly to itself, breaking down into a wet, plastic and totally impermeable base, with obvious results on drainage and turf.

## cheap construction

These errors were made in the interests of cheap construction on the false grounds that what one did not spend, one did not have to earn. Yet correct construction, though more costly, always turns out to be cheaper in the long run.

It bears constant repetition that drainage is our main problem but this must be achieved without creating an unnatural ecology, which has to be maintained artificially and very expensively - and which, as in all knife edge situations, is bound to come apart at the joints sooner rather than later. The two extremes can be reconciled by proper specifications, selection of special sandy soils for the root zone and avoidance of compaction during construction. Merely running a series of drains under a green is no answer. At best the drain lines show in a drought and at worst they drain only a narrow zone on each side of the drain. Therefore, logically the green must be built on a raft or stone carpet which is itself efficiently under-drained but the surface effect of such drains is masked by the raft.

Constructional compaction is still the prime fault of many courses built in the past twenty five years. Building by hand e.g. with wheelbarrows and spades is obviously out, if only because of the high cost, yet it is fatal to use earth moving equipment in



by Jim Arthur

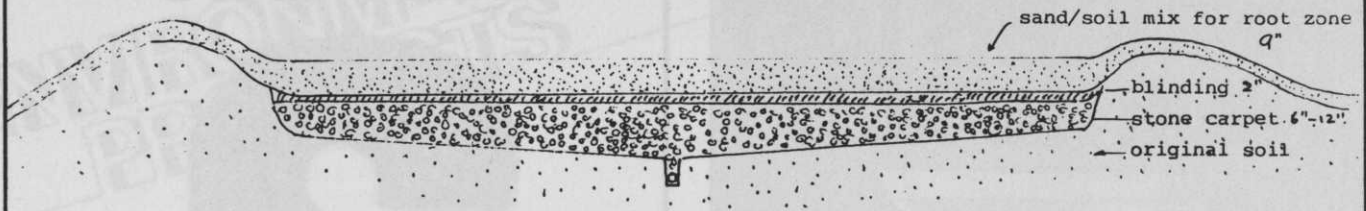
areas where special drainage is essential. It has always been the most important constraint in my specifications that no wheeled or tracked vehicle must be used on future putting surfaces or aprons. However this increases costs. Therefore a compromise has been successfully reached in recent years - and it is significant that no greens built to these specifications have proved to be unsatisfactory, in contrast to others.

## no argument

There is generally no argument about basal construction - namely that the base of the green should be excavated with a valleyed contour to shed any water which reaches it, laterally, to a shallowly inserted central spine and alternate and opposite herring bone drainage system, with flexible perforated plastic drains and pre-formed junction units, run to a proper outfall and not just, as so often happens to a small sump sited in the most important area of all, five yards in front of the green, creating a soggy bog and giving impossible run-up conditions. This excavation and construction can safely be carried out with earth moving equipment as the base does not need to be permeable and indeed it is an advantage for it to be consolidated and stable. The arguments start with the selection of material for the stone carpet. Whilst various grades of gravel may be theoretically effective as drainage they fail the practical construction test because gravel is so 'fluid' that it moves under



CROSS SECTION OF A GREEN (note vertical scale exaggerated)



Note valleyed base shedding water to the centre drain.

traffic, and sinks into the base of the green. It is essential for the success of this method of construction that angular stone be used because of its stability.

### heap of stone

Once the base is graded out, and the drains inserted and topped by hand with the same stone as for the carpet, after blinding them with finer stone or gravel, then a heap of the specified stone is dropped into the centre of the green, with a Hymac or similar long jibbed excavator. This machine is then moved, sitting stationary on that levelled pile, to introduce and level the rest of the stone carpet to conform to the finished contours of the green.

In many cases, there is limited local choice about the stone, but it must never be decomposable, soft sandstone and certainly never lump chalk or limestone. A size between 2"-3" or 3"-4" depending on availability, is ideal. Hard sandstone, gritstone, whinstone, granite, 'main-line ballast', flint reject from crusher-run have all proved successful. Small gravel has not, as it is unstable, and the only way for it to give good results would be to use a drag-line excavator to introduce it! Of course, there are large voids - intentionally - and of course the stone must be blinded, with a material naturally varying with the stone used, so as to be compatible and preventing infiltration of the root zone mix, again ranging from clean 'sharp' ash, clinker or smaller grades of stone or coarse gravel - and even to the extent of using two, compatible, graded blinding layers in the case of large stone.

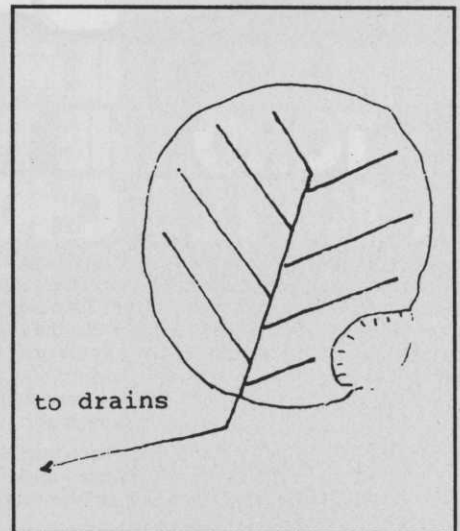
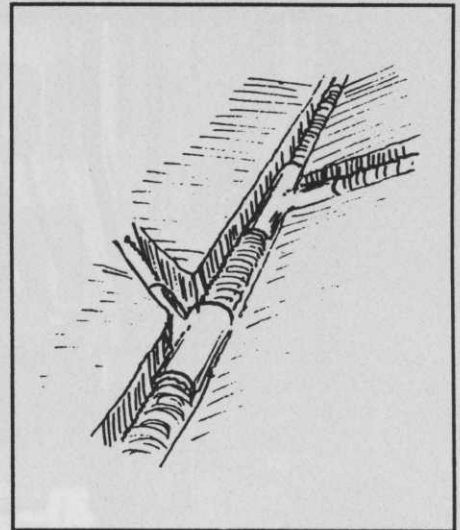
The secret of good greens is to try to copy what is under the

best natural turf - virtually a humus enriched light sandy 'soil' - but containing within the meaning of the Act no clay and very little silt. This does not mean mixing peat and sand! The ideal mix comes from deep alluvial deposits in East Anglia's often overlying gravel and derived from old, long since drained, lakes. It has been shipped in bulk to Ireland, the north of Scotland and the extreme South West. This fen soil is diluted with 70% - 80% sand of a specified grain size and uniformity and produces a consistent uniform root zone. More importantly, the subsequent top dressing can be carried out with exactly the same material.

### uniform layer

It is vital that the root zone layer is absolutely uniform if roots are to develop to its full depth. This means mixing the fen soil and sand off site, and never on the green site itself. Rotavating in peat or even fen soil into sand already introduced will never achieve the homogenous mix which is vital to success.

Pockets of sand, or worse still, peat or humus-rich soil can have disastrous effects on the overlying turf. The sketch shows the methods - but experience influences the results. This is a vast improvement on the old method of using local soil however much diluted with sand. Clay plus sand makes bricks. Only a decade ago some advisors were still recommending 2" of 'seed bed compost' over a local soil base (with or without stone carpets). Needless to say the roots never ventured into the unfriendly world below, and with this



encouragement surface rooting annual meadow grass soon displaced the sown grasses. If golf courses are to be built well and cheaply they must be built quickly. Of course, if you can afford to spend six weeks or more building one green, using hand work only, then gravel may be one answer but the end result is the needless spending of money. Courses costing £1 million and more, even if most of this has been spent in massive earth-moving of the

Continued on page 26 >>



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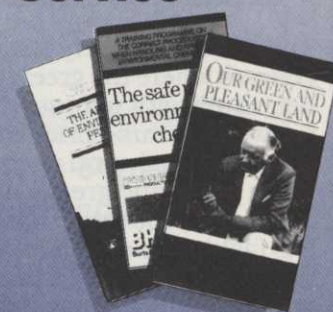
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## **the construction of golf greens**

<<

site to make it conform to the so called architects preconceived ideas ('Identikit courses' I call them), will certainly never see a satisfactory financial return on the expense. To build well and cheaply means building quickly and this means mechanisation. This is impossible on gravel - and even less so with pure sand.

### **very few courses**

There are in fact very few courses where the greens have been built with *pure* sand - most are with humus-enriched sand or a sandy soil - and not one of these pure sand greens has stood up to the test of time. It is fashionable to claim it was the use of the wrong materials or bad specification which was responsible for the poor results with sand greens, but whilst the use of binding angular, concreting sands made disaster inevitable, it is the concept that is wrong in the first place, and with it, the management which is enforced by this type of construction, virtually hydroponics i.e. growing plants without soil. This ensures that in the absence of any limiting climatic factors e.g. very hot summer temperatures, annual meadow grass is bound to dominate and under our climatic conditions we can never produce the superb pure bent (*Agrostis*) putting surfaces, which are such an attractive feature of the best desert courses in the States.

### **show me!**

I would be more easy to convince if anyone could show me a good green more than two years old, subject to even modest play in the UK, built on pure-sand. Let it be clearly understood - it is pure, not 'dirty' sand I am criticising - and even if we had - (which we have not) - the need for intensive irrigation in the UK,

annual meadow grass is bound to dominate as a direct result of NPK manurial treatment, without which even the fine grasses would die, on sand alone.

### **our main enemy**

Annual meadow grass is still our main enemy. We do not have to live with it. It is not inevitable unless management (past or present) is or has been wrong. But if you build greens the wrong way you have lost the battle before you start. There are of course many finer points of construction - and one is the need to insert the horse-shoe main serving the pop-ups into the base of the green (the perimeter of the stone carpet) without risking subsequent damage to the pipes, and at the same time avoiding unacceptable disturbance of the prepared seed beds. A plea is made to Architects not to indulge in flights of fancy with exaggerated contours. Mackenzie greens are all very well, but their inventor, who used the two-tier green to accommodate a green into a steep slope, stated that such greens must be at least 800 sq. yards in extent, to compensate for the fact that well over a third of the green area was not available as pin space.

### **always difficult**

Management of the slope is always difficult, not just mowing and the attendant risk of scalping, but also because everything sheds to the lower level - fertilizer, top dressing and above all water. With such greens pop-ups can at best provide only the basic minimum needs of the low wet areas and the ridges have to be topped up by hand-held open hose, with penetration aided by hand aeration and the use of wetting agents. Common errors with this construction are in the depth of the root zone which must vary no more than between 9" - 10" - just deep enough to sink a hole cup. One contractor who skimped construction costs and ended up with 6" soil, tried to resolve the problem by supplying 18 shallow hole-cups

on the course he built some years ago! This of course emphasises the need for constant and regular site supervision and total trust between architect and contractor if success is to be assured.

Surrounds to greens must also receive almost as much attention as the putting surfaces, though they are not normally built on stone carpets. Common faults are artificially steep, skimped mounds instead of bold but gentle contours, mowable by triple mower; coupled with false economy in soil preparation. Improved soil must be used, at least 4" in depth, after constructing the mounds integrally with the green.

### **care & protection**

Approaches - perhaps second in importance in turf quality only to the greens - need care and protection to ensure perfect run-up conditions - with virtually no botanical difference between them and the green itself - only in the height of cut. This means not only keeping all construction machinery off these vulnerable areas, by working from the back and sides of greens wherever contours or site boundaries permit, but in much more attention to seed bed preparation.

I prefer seeding to turfing though in case of need e.g. the course having to be ready for play when an hotel opens or investors wanting to see the quickest return on their money, turfing is feasible now that we have better quality-control on 'cultivated' turf. When seeding, use the newest strains of *Agrostis* and fescue as they are proven to be so much better - (see the STRI Turf Grass Seed 1988 lists) and if you must economise use less, not cheaper, seed. We generally seed too heavily - which can help to keep out stray grasses - but the best method is of course to sow only when the soil is warm and moist (i.e. late July to mid September), as a quick establishment will produce the best results - well worth waiting a few weeks for - especially if the intervening time is spent on



cleaning the seed bed. I recommend that surrounds and approaches are sown with exactly the same (expensive!) mixture as the putting surfaces, since after all we want no difference in the end result. How often one sees quite good greens and yet a foot off the putting surface, there is a thin open poor sward, with severe contamination from rakings pulled off the green and not collected! I cannot stress too much the importance of perfect marrying-in between apron and green itself. I am sure there will be many who will push rival claims for

alternative construction methods, but do remember one thing! This method is not only proven, but by far and away the largest numbers of courses in *good order* were built to this specification in the past decade and more, and none has needed lifting and all have given satisfaction as well as fine grass dominance, where management has been correct. I fully admit that not every new course with which I have been involved in the past twenty years is still successful but in every such case, my advice was over-ridden for the sake of saving perhaps £5-10,000 in

original construction costs, we are now faced with costs in excess of £100,000 for rebuilding them (and all the disruption). It pays handsomely to do it right first time. There is no mystery about good course construction any more than with good greenkeeping - just a case of using logic and commonsense to achieve the right end. There seems to me to be neither logic nor commonsense in using systems that have been devised to meet the special needs of arid desert areas totally different from anything found in the U.K.

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GREENKEEPERS in the UK are quite fortunate in that the number of pests that cause significant problems in turf is quite limited. Our counterparts in the USA, for example, have to deal with a wide range of insect pests - chinch bugs, sod webworms and bill bugs to name three examples. We do, however, have several pest problems, notably earthworms and also a few insect species who, if not discouraged by good turf maintenance or controlled with pesticides, can effect markedly both visual and playing qualities of greens and fairways. This article describes the main pest problems and gives advice on control.

### EARTHWORMS

IT is a belief of many that earthworms, due to their ability to aerate the turf, relieve compaction and aid fibre breakdown, are a desirable, even essential, inhabitant of turf. However, casts produced by earthworms are unsightly and also may be smeared on the turf surface by golfers and greenkeeping equipment to create muddy conditions which may impede surface drainage. Additional problems are that casts can create an uneven turf surface which may interfere with play and also provide a seed bed for weeds.

Consequently, earthworm control measures are often necessary, particularly as the advantages conferred naturally by earthworms can be gained with mechanical aeration and scarification equipment.

Earthworms can be discouraged by management techniques such as boxing off clippings, avoiding excessive use of organic fertilizers or top dressing (to limit the earthworm's food supply). These operations will keep earthworm invasion to a minimum and consequently limit the need for chemicals.

Chemical control is, however, usually necessary if earthworms are to be maintained at an acceptably low level. At present chlordane is the most reliable chemical; it persists in the soil and remains effective for several years. As an alternative carbaryl may be used, but in most situations

# TURFGRASS PESTS

control will only last for one season. A third chemical, thiophanate-methyl, also has a deleterious effect on worms but to achieve satisfactory control application may have to be made fairly frequently.

### INSECT PESTS

BY far the most important insect pest of turf is the leatherjacket, but other insects such as the fever fly (see Peel, 1988) and chafers may also cause problems. All these insects damage the turf in a similar way; their grubs feed on grass roots resulting in patches of severely browned or bleached turf. Attacks of leatherjackets are particularly likely in spring or autumn after hot summers or mild winters. Fever fly and chafer damage is usually noticed in late spring. In severe attacks, large tufts of damaged turf may be easily pulled out by hand, revealing the feeding grubs (up to 1000 per m<sup>2</sup>) underneath. Bird activity (mainly rooks and starlings) feeding on the grubs is often the first sign of attack.

Carbaryl, chlorpyrifos and gamma-HCH may be used against leatherjackets and should be applied in late

by Neil Baldwin  
Plant  
Pathologist,  
at the STRI

autumn or early winter whilst the grubs are still relatively small and before they cause appreciable damage.

Chlorpyrifas is effective against fever fly and gamma-HCH against chafers respectively. These chemicals should be applied as soon as the feeding grubs are noticed.

### REFERENCE

Peel, C.H. (1988). Observational note. A severe attack by fever fly (*Bibio spp.*) on a trial area of red fescues at Bingley in late summer 1987. *Journal of the Sports Turf Research Institute*, 64.

Below: Extensive damage by fescue plots caused by the fever fly.





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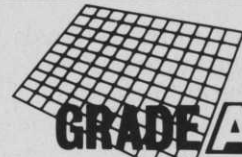
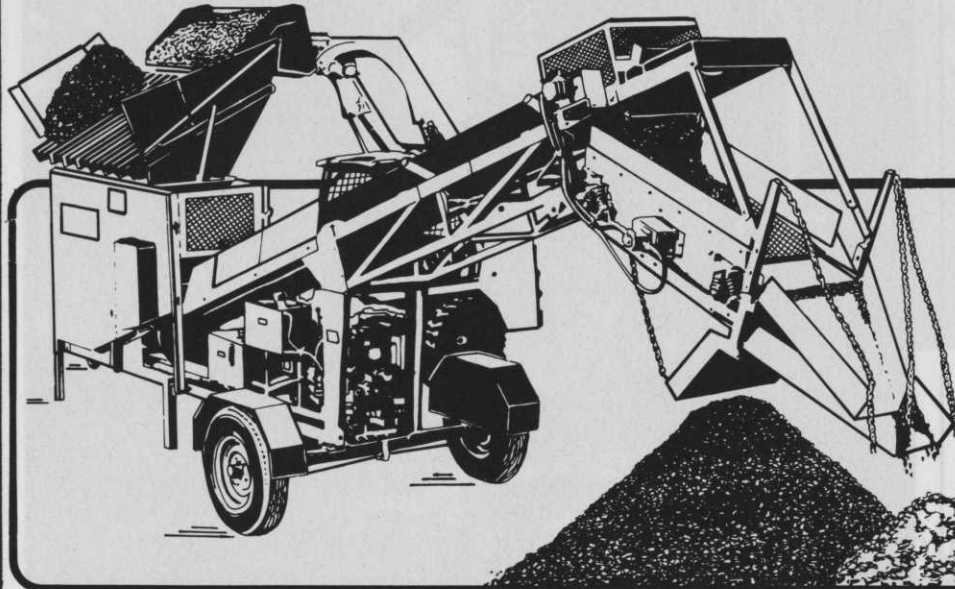
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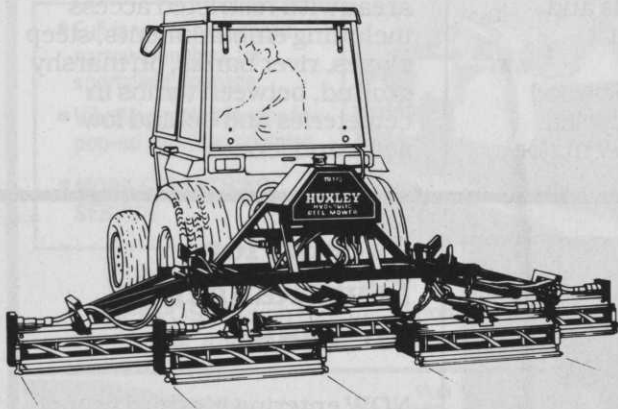
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## COMPACTION ?





# NOTEBOOK...

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- \* Its adaptability enables it to work equally well in what would normally be considered inaccessible locations.

This revolutionary development works like a super-efficient hybrid wood chisel and saw. Instead of attempting to uproot the tree stump, it speedily removes successive wood chips, thus eliminating the disadvantages of



traditional grubbing methods.

The tree stump may either be removed entirely, or simply taken down to a depth of around 45cm. In either case only the stump is touched - the surrounding soil levels and adjacent areas are not disturbed.

After deracination the wood chips can then be re-cycled. Contractors and other major

users will be able to mount the machine onto plastic Caterpillar-type tracking to protect road surfaces and fine turfed areas. The unique design features enable it to be used in areas with restricted access including embankments, steep slopes, river banks, on marshy ground, between tombs in cemeteries and behind low walls and fences.



## Facelift for Lawn Ranger for 1988

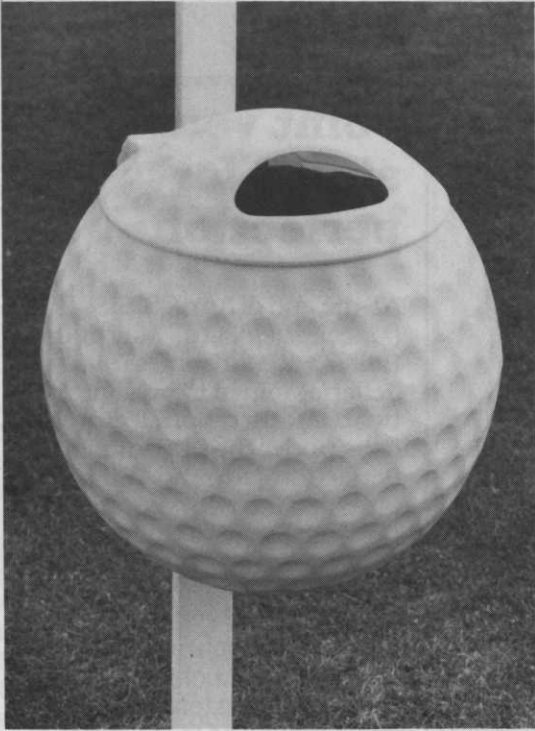
NOW entering its third year of production, the 58" Allen Lawn Ranger has undergone a facelift for 1988.

The new look machine now has mudguards over the front wheels and new handlebars, and also features new type easy height adjustment.

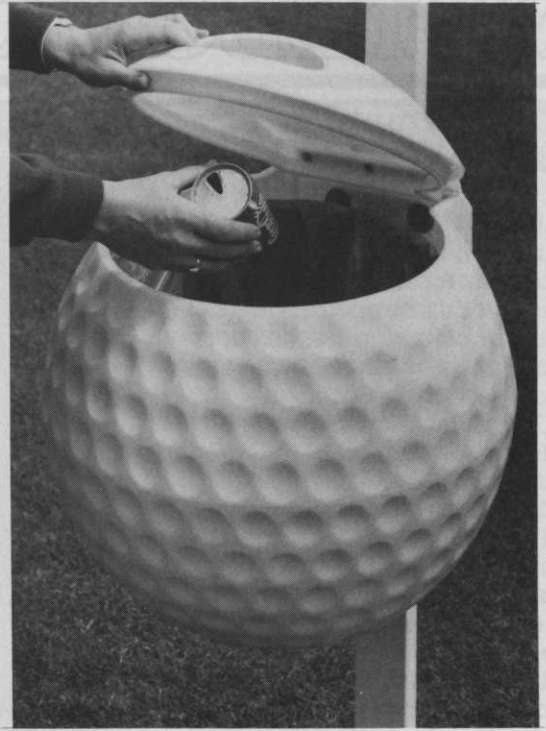
The machine is now only available with 8hp Briggs engine.

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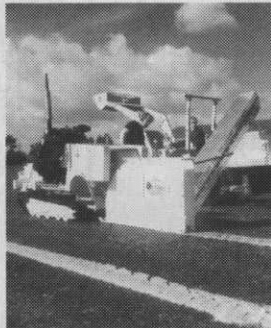


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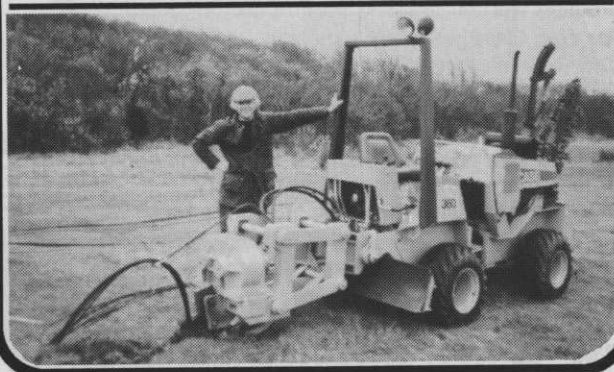
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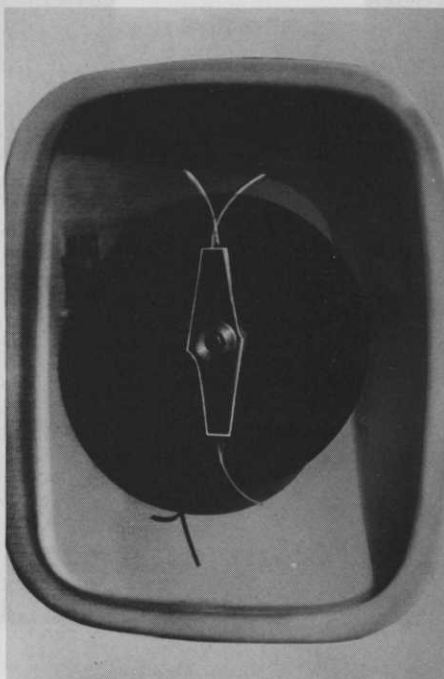
Called the Allen "Safeway" Mowing System, the manufacturers claim it is the ultimate in safety blades.

Their tennis ball test - a ball is thrown under the hood with the machine operating and then ejected in perfect condition - has to be seen to be believed. The blade uses the nylon line cutting principle first introduced into the UK by the company in the early 70's.

Due to the line being protected by the hood of the machine, minimal wear is experienced and the 3mm line far outlasts that used in the more conventional way, such as a brushcutter. Should the operator's foot go under the hood, no damage is sustained. Likewise when used on the electric machines it will not cut the electric cable.

The body of the new blade is made from nylon, a very tough yet lightweight material, whilst the actual cutting is done by 3mm cutting line replaceable in seconds.

For the 1988 cutting season,



The new safety blade

the blade will be available only for Allen petrol hover mowers, but development is taking place, so the Safeway blade can be fitted to all non-collecting petrol rotary mowers and our electric machines.

Designed as a result of a request from a public authority for a safer way of cutting steep banks with hover mowers, there new Safeway Mowing System is the first safety blade to be designed primarily for petrol mowers.

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## Joint venture aimed for perfection

AT the end of April, SISIS (Macclesfield) Ltd., May and Baker and Ransomes, Sims and Jefferies joined in presenting two demonstration/lecture days under the title "Aiming for Perfection". Around 160 people attended the two days at the Northumberland College of Agriculture and the BAC Club in Preston.

SISIS demonstrated a large number of machines for turf maintenance including the Hydromain system and the latest additions to the range of attachments, the Quadraplay and the new Hydrocore Fine Turf Aerator. Particular interest was shown in the new large diameter hollow tines for thatch removal.

May and Baker gave a very informative illustrated talk on turf diseases and chemical control with particular reference to the new pesticide regulations.

To complete the day's programme Ransomes, Sims and Jefferies demonstrated a selection of machines from their wide and comprehensive range of grass cutters, showing a variety of models for different types of sports surface.

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**For the Greens Committee** a swivel flagpole for less money than most other ordinary flagpoles. Introductory free flag offer ends 1st May

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# NOTEBOOK...

## Guernseyman defects to Effingham Park!

A GUERNSEYMAN, Christopher Nicolle, has been appointed to the new post of estate manager at Effingham Park, on the Surrey-Sussex border, near Gatwick Airport.

Mr Nicolle will take over responsibility for the development and upkeep of the 40 acres of mature lawns, gardens and trees, including the nine hole golf course which has been a feature of the park for the last nine years.

Mr Nicolle is a fellow of the Royal Horticultural Society and is a member of The Men of the Trees and BIGGA. He is an Honorary Member of the Scottish Greenkeepers Association.

Effingham Park's grounds were originally developed more than 150 years ago. They fea-

**SEA NYMPH** is a finely ground seaweed meal produced by drying and grinding the seaweed while at the same time preserving all its valuable fertilising properties. The seaweed, which is harvested along the west coast of Ireland, is free of contaminants such as weed seeds, can easily be spread by mechanical means.

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It stimulates the plant's activity leading to better root development and an increased uptake of nutrients.

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Seaweed has a high water holding capacity for light soils and by improving soil texture, prevents water-logging in heavy soils.

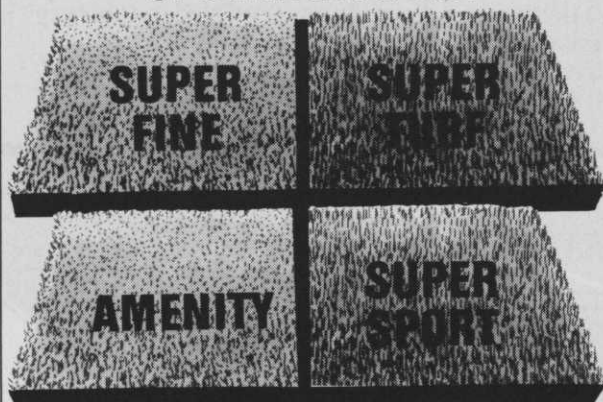
ture fine mature Wellingtonia trees planted then to celebrate the British Victory at Waterloo.

A 122 bedroomed luxury hotel, health club and the gourmet Wellingtonia restaurant are

nearing completion at Effingham Park and are due to open in late summer. They will complement the existing conference and function centre which opened 11 years ago.

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# NOTEBOOK...

SEVERAL products were demonstrated at the recent John Shaw Open Day, including the main line TORO machines. First to be put through its paces was the Groundsmaster 220D, a recent addition to the TORO stable. This 3 cylinder diesel engine machine is highly manoeuvrable and inevitably is fast gaining praise within its marketplace. The 52" or 62" optional discharge cutter decks are an addition to the range, and a unique flotation system ensures improved ground following.

The Flagship of the TORO range, the reelmaster 450D, was also demonstrated. This high output all-hydraulic mower powered by a 50hp Mitsubishi engine with power steering travels up to 15mph and will mow up to 10.5 acres per hour. 5 or 7 bladed cutting cylinders are available and the heads can be either fixed or floating.

Within the TORO selection of Lely the New Reform-Metrac 4-wheel drive tractor unit has been added to the range to



## Toro products on show

enhance and complement the existing TORO products. The Metrac is a 38hp 4-wheel steer unit which is ideally suited for banks and difficult terrain work, which can be fitted with flails or rotaries or any other front or rear mounted attachment. The unique feature of this machine is the instant availability of 4-wheel steer, front wheel or indeed crab steer which allows the operator to have both axles going in the

same direction so when working on a steep slope the driver can work away from a wall or fence without getting stuck against it. There is a rear three point linkage which allows additional use of implements on the back. This tough, yet quiet, 3 cylinder diesel with an output of 30 plus HP has a reversible gearbox with 8 forward and 8 reverse gears, ensuring ease of operation.

## Appointments

FOLLOWING five years as an area representative with the well-known horticultural dealer Henton & Chattell, 33 year old Mark Redford has been appointed Ransomes grass machinery representative for the East Midlands and North East England.

JOINING Ransomes as a Grass Machinery Technical Representative, 27 year old Michael Prentice had previously been a service engineer with a well known landscape contractor.

After leaving school, Michael joined the Amenity Dept of Kent County Council as a trainee and attended the Mid Kent College of Technology.

JACOBSEN have appointed Stuart Jeffs as area sales manager, and he will operate on the east side of the country.

Formerly employed selling horticultural and domestic grass equipment as well as a wide range of turf machinery including Jacobsen.

Stuart has a background of sales engineering, and experience in turf culture.

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*Pre-Packed supplies available. Special mixes to your specification prepared. Also, Screened Sedge Peat ("Fenpeat") in bulk. Lime Free Sands, White or Yellow. Screened Loam, etc.*

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Like all John Deere cylinder mowers, the 305 is hydraulically driven - substantially outperforming ground driven mowers.



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# NOTEBOOK...

## Ride-on with Huxleys!



HUXLEYS Grass Machinery is well known as the importer and main distributor for the Cushman Turfcare System. It is a family business justly proud of its achievements and expansion over the last decade, which has seen the company move into the manufacture of accessories for the Cushman and the production of seven different kinds of hydraulic reel mowers. All of this expansion has been self financed, growth having been achieved alongside maintained profitability. Huxleys have only a small research and development team headed by Eddie Fox, but four years ago they started to tackle the design of a ride-on greensmower. The result is the "358" 3 cutting units with a width of 58 inches, to be launched at the IOG Exhibition at Windsor. The machine incorporates a number of features which are a direct result of comments and suggestions received from greenkeepers. The "358" is a basic no frills machine as

many greenkeepers feel that sophistication has gone too far. Being a diesel (Kubota z600 two cylinder) it is very economic and surprisingly quiet, the cutting reels making more noise than the engine. The drive is to the front wheels, but the single rear wheel has power assisted steering. Huxleys reckon to price the machine at a little over £10,000.

The machine comes with a choice of cutting units, the standard being an eight bladed reel adjustable from 1/8 to 1/2 inch. Drive to the reels is fully hydraulic by orbital type motors fitted direct to the end of each reel. All the units are interchangeable. There is a single lever control for cutting units lift/lower and reels rotate/stop. Up to 140 cuts per yard can be made at 2mph.

Grass boxes are fibre glass and feature an integral grab handle.

For further details contact Huxleys Grass Machinery at The Dean, New Alresford, Hants, SO24 9BL Tel: 0962 733222

## NTC Secretary nearly full time!

JOHN SHILDRICK on his retirement from the Sports Turf Research Institute will become the virtual full time secretary of the National Turfgrass Council, a role he has previously held in an honorary capacity. Speaking at a Patrons lunch at Stoneleigh during the highly successful 'Landscapes Industries '88' exhibition, Howard

Swan the NTC Chairman, outlined future plans for the full time secretariat, additional seminars and wider distribution of the NTC newsletter. Responding on behalf of the founding Patrons, Keith Cleverly of ICI congratulated Mr Shildrick on his appointment and the Chairman on the progress the council had made.

**BIGGA's marquee at this year's Openwill include a display by the five English colleges recommended by the greenkeeper training committee: namely, Reaesheath, Askham Bryan, Cannington, Plumpton, Sparshalt. College personnel will be in attendance.**

## Landscape Industries '88

THIS new exhibition at the National Agricultural centre at Stoneleigh attracted considerable support both from exhibitions and visitors. Split into indoor and outdoor working stands, all concerned voted the two days a great success. Stoneleigh has a great deal to offer the visitor and its location means a large catchment area.

The working exhibits were most impressive, especially the earth moving and cultivation equipment.

Inside it was particularly pleasing to see the educational side of the industry well represented. "Landscape Industries" will no doubt be bigger in '89.

TENSIOMETERS as featured in our May issue can be obtained from Van Walt Ltd., 108 Blackdown Rural Industries, Haste Hill, Haslemere, Surrey. GU27 3AY (0428) 54304.

## Privileged!

BRITISH SEED HOUSES LTD were privileged to supply all the grass used on the new Jack Nicklaus Golf Course which has been constructed over the past three years at the St. Mellion Golf & County Club, Saltash, Cornwall. This superb course has been sown with Pencross Creeping Bent on the greens and Penneagle Creeping Bent on the tees. The greens are in perfect condition for the official opening with British Seed Houses A12 Fairway Grass seed mixture which is based on their top rated Frida Chewings Fescue, which has been used on a number of major golf course projects in recent years.



# APPOINTMENTS

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for Forest Of Arden Golf And Country Club. This position offers an excellent opportunity for an ambitious, experienced young greenkeeper 25-35 years preferred, to develop his knowledge and training, working with one of the industries largest employers, on this magnificent 36 hole complex.

Applicants should be qualified in all aspects of modern greenkeeping methods, including machinery maintenance and be able to lead from this front.

Salary commensurate with experience. Please reply in writing including a full C.V. to:

**Mr.G.Porter (Course Manager)**  
Forest of Arden Golf and Country Club,  
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## CHERWELL DISTRICT COUNCIL

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Applications are invited for the post of First Assistant Greenkeeper at the Council's successful 18 hole Cherwell Edge Golf Course.

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You will need to work on your own initiative and have a thorough knowledge of golf course machinery and fertilisers and the pesticides regulations. You will experience will be desirable.

The Council's relocation package, worth up to £3,000, is available in appropriate cases, which includes lodging allowance, legal expenses on the sale and purchase of a house, Stamp Duty and a settling-in allowance. Assistance with temporary housing accommodation will also be considered. If you are interested, please telephone Banbury (0295) 61177 (24 hour answering service) for an application form and further details.

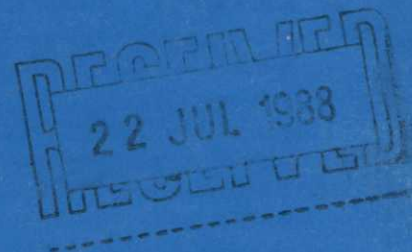
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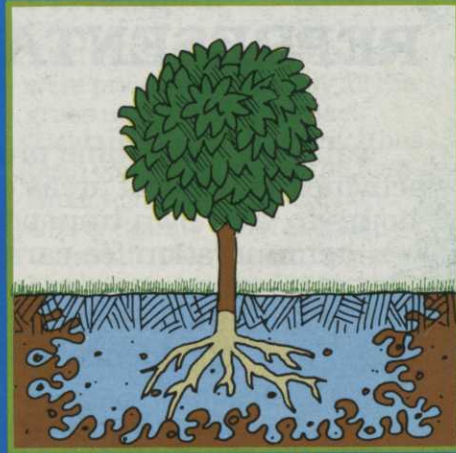
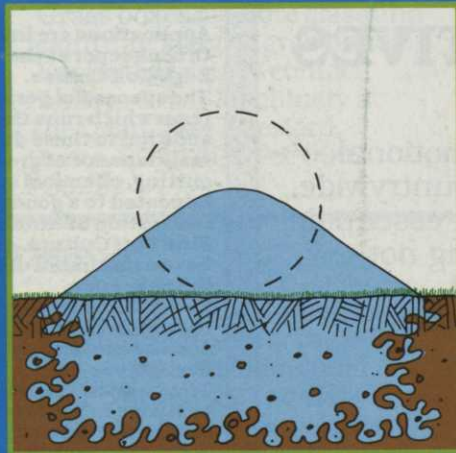
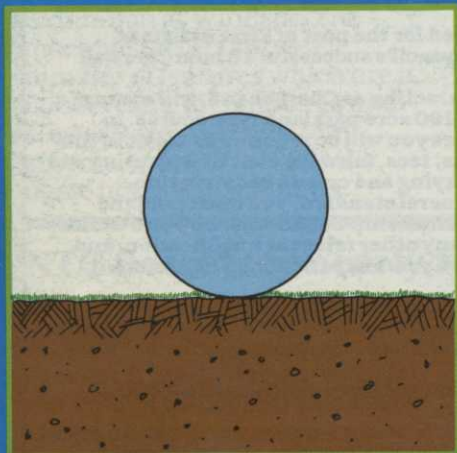


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