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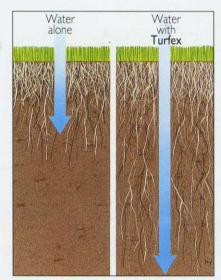


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Official publication of the British & International Golf Greenkeepers Association

MARCH 1992



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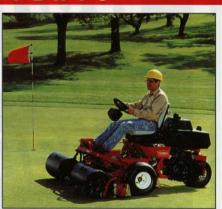
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COVER PICTURE:

The beauty of the Emerald isle, captured in this picture of Straffon GC Photograph: Irish Tourist Board



The BIGGA Turf Management Exhibition and Seminar Programme is now recognised as the industry's most significant indoor event. Contact Debbie Savage on 03473 581 for a BTME 1993 Information Pack and find out how your company can take part.

Greenkeeper Education and Development Fund

Launched by Viscount Whitelaw at BTME 1992, the Fund provides the key to the future for greenkeeper, golf club and game. Individuals and companies can join either the Golden Key or Silver Key Circles. For details, contact BIGGA on 03473 581.

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■ Sam Hagen, course manager at the Vale G&CC in Worcestershire, tells me that the Midlands Pro/Am will be staged there on July 27th-30th, over what is probably Europe's longest new course at 7,940 yards.

Open just one year and seeded with Penncross, it is Sam's idea to invite young greenkeepers, especially those with experience gained working with Penncross (perhaps on the continent?) to join the Club as working/paid guests for a period of 4-5 months leading up to the tournament. Interested? Call him on 0386 82545 (home) or 0386 82427 (office).



■ The new chairman of the British Lawnmower Manufacturers Federation is Barry Abson of Atco-Qualcast Ltd. Barry has worked for Atco and Qualcast for nearly 20 years and became a director in 1977, having qualified in production engineering before moving into management in the late '60s. Full members of BLMF include

Atco, Black & Decker, Flymo, Hayters, and Ransomes Consumer. Together they claim to manufacture at least 90% of lawnmowers sold in the UK market.

■ Congratulations to Arne van Amerongen, Holland's greenkeeping ambassador and 1991 ICI Greenkeeper of the Year finalist, on his appointment as course manager to the Syke Golf Club, an 18 hole parkland course in Germany. He tells me that staging the German Open is a distinct possibility at Syke in three years time. Arne will maintain a high profile in Britain, for he is continuing to attend the Cheshire College of Agriculture under the expert tutelage of Dennis Mortram.

■ Avoncrop Amenity Products continue their penetration in the market with two new staff appointments. John Palfrey becomes Technical Sales Manager responsible for technical back-up and the marketing of new and existing products in the south, with Brian Stephens appointed as Technical Sales Regional Manager for Bucks, Berks and Oxon, Wilts, west Surrey and Hampshire.



■ Bringing 'new blood' and enthusiasm to an area of business regarded by the Company as vitally important, Bruce Morton has been appointed sales executive, Heron Power Products, to cover the south, south east and East Anglia and to work through a specialist dealer network for Echo and Suzuki power products.

■ Steve Marnoch, one of the new 'young tigers' of golf course architecture and most recently Project Manager, Golf Course Construction Developments whilst being retained by



■ The stork has been working busily in greenkeeping circles, with the delivery of a new daughter (and sleepless nights!) for Jim and Debbie Russell of Lingfield Park. Moving slightly further up the M1 to mid-Anglia, Andrew and **Ann Kennett of** Knebworth welcomed Elizabeth Helen into the world. Congratulations to both sets of parents.

the Casey Group as manager of their golf course construction division, is to take up the mantle of full time architecture under his own banner – Steve Marnoch Golf Course Architecture. He expects to gain entry as an Associate of the British Institute of Golf Course Architects in April.



■ Michael Portsmouth has been appointed the new Parts Division Manager, Kubota UK Ltd, and will be responsible for the complete parts operation, which includes purchasing, inventory control, despatch and credit control, together with trading terms and conditions. Prior to joining Kubota, Mike held senior posts in the parts

and service departments at GD Mountfield and Technamotor UK Ltd.

Here's your Open invitation

The 121st Open Championship will be held at Muirfield Golf Club, home of the Honorable Company of Edinburgh Golfers, from July 16th-19th 1992, with course manager Chris Wittle in control of course preparation.

As is usual, members of BIGGA will form a Greenkeeping Support Team and those wishing to be considered for this should forward their names and addresses to HQ as soon as possible.

Preference will be given to those who will be free for a period which begins on Wednesday evening of July 15th and finishing on Sunday evening of July 19th, with priority being given to those who have formed part of the Support Team in previous years,

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DORMER ROAD, THAME OXFORDSHIRE OX9 3UN Tel: 084421-4500 Fax: 084421-6685 Telex: 837551 George Malcolm talks to David White about his year as BIGGA Chairman

tic year!" Thus began my conversation at BTME with George Malcolm, BIGGA's Chairman during the past year.

"Look around you, see for yourself the success of this one event alone, look at the way our members have rallied to support our aim – simply to be the best indoor trade show in the industry – multiply this one achievement by ten and you have my year in a nutshell, a totally satisfying and rewarding experience. I well remember talking to you 12 months ago, of my hopes and aspirations – and of my apprehensions – and can now sit back comfortably and relax, knowing that I received all the support for which I had hoped.

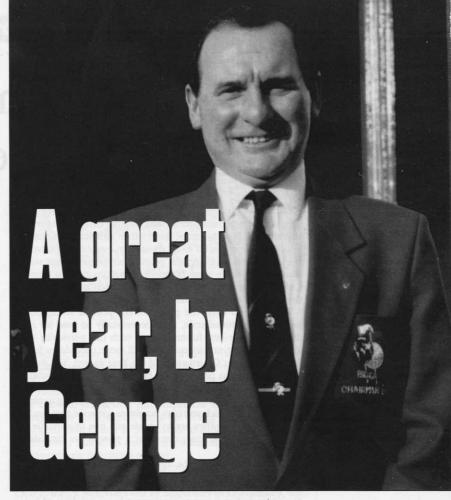
"If I were to single out any one body for praise it would have to be my own Club, Middlesbrough Golf Club, for their totally unselfish support and encouragement. Without that, nothing like as much could have been done during my term of office – so I'll be back to Middlesbrough in 1992 to try and reward them equally, including my selflessly devoted greenkeeping team, for they're great guys, every one!

"Do you remember my sales pitch last year, my principal goal? This was one calling for members to bring in new blood and swell the ranks. Well, it seems my words didn't go entirely unnoticed, for our membership has certainly grown over the past 12 months – and I've achieved a 200% goal by bringing in two new members personally. This is an aim we *must* continue to promote, for there is no doubt that the strength of this or any other organisation is in numbers – the point being that our collective voice is increasingly heard and reacted to in no uncertain fashion.

"You ask me if I've achieved all I set out to do 12 months ago, and in truth I do believe I have. I've tried for a high profile, attending every possible function to which I was invited, and I only missed one event over the whole period – a big disappointment at not being at The Belfry to cheer the BIGGA team to victory in the Kubota Challenge. As it happened, the team managed a 'whitewash' and I shared in their pride of achievement, but I do wish I could have been there in person, just to rally the team!

"It's not been a pressurised year at all, thanks to a bonny team behind me on the Board of Management, and I can do no more than repeat my plea of 12 months past, which is for every member to 'wave the flag and bring new incumbents into our midst'. I still believe that the package BIGGA provides is the bargain of the century!

"Although we cannot achieve the membership numbers of our American cousins, simply because of their obvious larger geographic areas and population, we are actually pulling in more greenkeepers per Club, county or region than those of the USA and the percentage total of greenkeepers in BIGGA is far greater than that of the GCSAA, which is no mean feat! That stated, I'll not be content until



we have a total 100% membership, with *every* greenkeeper in the land proud to be a BIGGA member.

"To younger greenkeepers, I can say that their increasingly rosy future undoubtedly lies in further education, and I urge them not to let a further day go by without enrolling in some form of higher education programme or other. The choice is limitless, with our own Master Greenkeeper Certificate and management courses high on the list of attractive possibilities. I'm also really excited about the probability of greater numbers entering the ICI Greenkeeper of the Year awards and I'm busy encouraging greenkeepers I know to put forward a fellow greenkeeper that they secretly admire and whose expertise is worthy of recognition.

"Now I'm looking forward to handing over to Roy Kates in April, though I shall certainly miss the heady feeling, the elation of being in the driving seat for a whole year and it will perhaps be a week or two before I come down to earth! In conclusion, I still maintain that openness has been the saviour of my year, with folks who had something important to say taking the right course in saying it to the right people at the right time. It is something that Roy will no doubt want to encourage and nurture. This has been the most wonderful year of my life and I wouldn't have missed it for the world!"

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Editorial Comment

Hidden benefits of nominations for ICI Premier Greenkeeper

n the February issue I promised freedom from 'party politicals', whilst declaring in the forthcoming months that readers would find it hard to escape those 'other' national electioneering issues that were bound to hit them from every media direction. Well, that was February, the political temperature was still on simmer and there were far more important tubs to thump including our own highly successful Golden and Silver Circle Greenkeeper Education and Development Fund.

Be that as it may, the power of the printed word, Greenkeeper International style, must occasionally be used for prodding the reader into further action, with this particular 'prod' aimed at urging nominations for still more candidates for the 1992 ICI Premier Greenkeeper of the Year Award. The Association is seeking to promote the biggest number of candidates ever in 1992, so to begin this column, I propose to run my own 'party political' for this admirable award by outlining again the simple rules by which you may nominate someone that you may know and admire. They are so simple and free from hassle that anyone, indeed everyone, can enter a prospective candidate and they should!

All that is needed is the agreement of your choice of head greenkeeper or course manager, someone whose management and playing conditions you admire, to complete all stages of the Award, including a course assessment by an established judge. The course itself doesn't have to be a championship layout, indeed it could be the most humble little nine-holer tucked away from all but local admiration. Having played many such delicious nine-hole courses, especially in Scotland, I can vouch for the particular charm and superb conditions of such gems, often achieved on peppercorn budgets by totally dedicated greenkeepers who are, quite simply, unsung heroes.

Another point to remember is that any member can nominate

a head greenkeeper for the ICI Premier Greenkeeper Award, including those members in the trade, from the educational sector, or even a green committee chairman or Club secretary. Most important of all is that we want to hear from our members and we want to hear now! On a more commercial tack, such a nomination can look awfully impressive on a job application, recognising as it does that here is a greenkeeper who does an exceptional job. Please fill in the pre-paid card contained within the pages of this issue - let's hear it for those untold numbers of unsung heroes!

Turning now to other matters, I was disturbed to learn from Paul Copsey, Kent's prolific scribe, of yet another example of 'sharks about' infiltration, this time into the very midst of professional greenkeeping circles by a member of the PGA. Apparently, one such PGA pro has formed his own management company and has circulated Clubs in the south, proposing that his company should manage their entire course and clubhouse, lock, stock and barrel, installing a full complement of 'personally' selected staff - pro, greenkeeping, bar and catering etc., and using equipment owned or leased by the management company - all at a fixed fee. One can only shudder at the long term implications of such a 'business', spawned no doubt by the unfortunate introduction of local authority competitive tendering, for as Paul was at pains to point out, such deals usually see costs pared to a minimum by cutting staff, wages and course budgets, with the inevitable result being the lowering of stan-

Paul went on to say that the PGA have been notified of this matter and propose taking measures to restrict the offender's plans. One wonders how powerful on matters of discipline the PGA really are, thus we can only hope they have the teeth to bite - and bite hard! **DAVID WHITE**

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NOTICE TO MEMBERS

The BIGGA Annual General Meeting will be held on

Wednesday 8 April 1992 at 2.30pm

in The Royal York Hotel, York (immediately adjacent to the Railway Station)

- NEIL THOMAS,

Copies of the audited accounts will be available from Section Secretaries during the four weeks prior to the Meeting



Executive Director ANNUA GENERAL MEETING

Concluding our speaker profiles for 1992's top education event

Barry Cooper is the well known son of a well known father: nationally acknowledged drainage expert, Turner Cooper, who invented the first trenchless drainage machine back in 1954 and authored the definitive book "Practical Land Drainage" in 1965.

Following a spell in the RAF until 1955, Barry rejecting a place at Nottingham University in order to take over the family drainage business, a career he is still actively involved in, though now as managing director of his own drainage contracting business. After some 36 years experience in the drainage industry, Barry spends most of his time working in a consultancy capacity.

His lifetime interest in sport (he is a keen golfer, once playing to single figures but now 19 and rising!) and a chance meeting with the redoubtable Jim Arthur in the 1970s led him to become involved in golf course drainage consultancy work, a task he is well able to appreciate both from the playing and administrative side of golf, especially as he enters his second term as green chairman of his home course, Knebworth Golf Club, Leicester.

He lists amongst his clients such worthies as St Andrews Links, Turnberry, Royal Liverpool, The Belfry, Woodhall Spa and Alwoodly Golf Club. Barry's conference subject will be "Golf Course Drainage – Before and After Construction".



Bernard Findlay will be posing the question: "Can you build a Seaside Links – or is that Nature's job?" As one who trained and worked on three golf courses in the south east of England before departing to the northernmost tip of Northern Ireland in County Londonderry to become course manager of the 45 hole Portstewart Golf Club complex,

Bernard no doubt has some interesting views on working with linksland, for he has lived and worked at Portstewart for the past six years – during which time he counts amongst his achievements the development of new holes on the Portstewart course and the staging of the Northern Ireland Iseki qualifying event.



Laurence Pithie is Britain's highest profile head greenkeeper, being the recent recipient of the UK's first ever Master Greenkeeper Certificate, presented to him at BTME in January by the Association's President, Viscount Whitelaw. His career pattern is equally well known, taking him straight from school to the famous Bruntsfield Links, a course of studies

at Elmwood College and later to the head greenkeeping role at Moretonhall Golf Club, also in Edinburgh.

A further five years at Sandiway Golf Club in Cheshire was followed by a move south to his present position as course manager at the Minchinhampton Golf Club in Gloucester, a post he has held since 1981. He lives in nearby Tetbury with his wife Sandra and two children, aged six and ten.

On three occasions Laurence has visited the USA – twice as National Greenkeeper and Groundsman of the Year – and on one occasion presented a paper on turfgrass management to an American audience in Houston, Texas. When not on home ground, and sandwiched between his other interests of golf and badminton, he can be found visiting and photographing other courses and he now possesses a large collection of slides, books and literature relating to golf course management. His chosen subject will be "Golf Course Development – A Greenkeeper's Viewpoint".



Jonathan Gaunt, a keen 5 handicap golfer, graduated from Leeds Polytechnic in 1985 with a BA (Hons.) degree in Landscape Architecture, followed by a further Diploma in Landscape Architecture.

His first experience in the golf industry was as a humble labourer, working for course



contractors, Brian D Pierson Ltd, in 1987. Working at 'grass roots' level set him in good stead and he eventually became a construction supervisor, working on courses such as The Jubilee at St Andrews and St George's Hill in Surrey.

In 1989 he joined Golf Landscapes Ltd as a design/contracts manager, his first contract being the design and construction of the Family Golf Centre in Stevenage. In addition he co-designed the Hanover Golf Club and designed and supervised numerous reconstructions to existing courses.

Autumn of 1990 saw him in business as a freelance golf course architect, his first design being the Magnolia Park Golf Club in Bucks, soon followed by Snipedales in Lincolnshire, both due to be built this year. In his first year he has seen the building of his 18 hole course at Elemore in Sunderland, 27 holes at Breinholtgard in Denmark, 27 holes at Farrington, Bristol and is currently supervising the construction of Sandmartins in Berkshire. Jonathan will discuss "Project Management – How Does It Compare To Normal Golf Course Construction Projects?"



Lindum Seeded Turf, the sponsor of BIGGA's 1992 Educational Conference along with their associates, is a company managed personally by members of the Fell family, with **Stephen Fell,** ARICS, MRAC, as Chief Executive Director responsible for production and management. Stephen will address the conference on a provocative subject "Course Aesthetics, Good, Bad or Indifferent." He is

concerned that in new course constructions, the most vital aspects essential for longevity without major problems are often neglected – or even ignored! Stephen Fell has vast commercial experience and worked for some time as a surveyor involved in land use and open cast reclamation for ADAS in Durham before qualifying as a Chartered Surveyor in 1977. In the past he has managed a farm in France, controlled the large farm and forest estate of Robin Leigh-Pemberton in Kent for nine years, and travelled extensively in the Antipodes, studying turf technology as a Nuffield Scholar both in Australia and the USA. As a practising conservationist Stephen is very concerned about the environment and would like to see architects putting as much thought into the environment of new courses as they do into design.

David Boothby is another of Lindum's associates making a presentation at Cirencester, better known to many as Toro's Sales Manager. Thirty three year old David has been in the trade since 1978, beginning in parts sales, progressing through general sales in a Toro dealership to that of distributorship with Lely (UK) Ltd since their acquisition of the franchise in 1983. For a further seven years David worked in the south west providing support to dealers before moving to Cambridgeshire in May 1990 to take up his present sales management position. In common with Stephen Fell of Lindum Turf, David sees some pretty dire examples of mismanagement in the field of new golf course constructions, particularly in the machinery sector, and will address on the subject of "Machinery – The Right Equipment for a Successful Finish."



• For a copy of the National Education Conference programme and booking form, contact BIGGA HQ on 03473 581/2 Golf's increasing popularity has brought a big demand for new courses; and the market has responded with some 1,400 planning applications to satisfy public need. But are the *right* courses being built? LAURENCE PITHIE examines the facts

few years have passed since an advisory panel to the R&A published the document 'Demand For Golf', stating the need to provide another 700 or so courses over the next decade. With some 1,400 planning applications currently being lodged with local authorities, it appears the initial target will be reached well before the end of the century. However, this does not necessarily auger well for the future since there are not enough qualified architects, contractors or greenkeepers available to design, construct and maintain them to the desired standard.

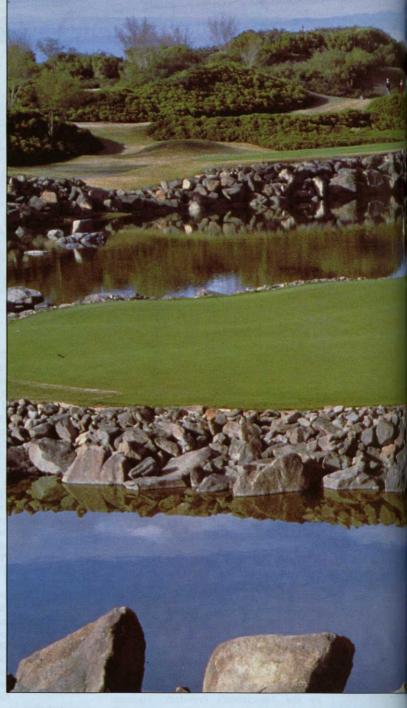
Whether or not the R&A's assessment is accurate is perhaps irrelevant. What *is* important is that the right type of course is provided, one that is developed in a professional manner and at a price which can be reflected in acceptable future playing costs. This article examines the current situation and asks: 'Are these new courses meeting current demand?'

From its early origins in the 15th century and indeed for the next 400 years, golf was a game enjoyed only by the affluent members of society and mainly limited to the east coast of Scotland. Since the costs of hand made clubs and balls were prohibitive, the game remained an exclusive pastime until the invention of the 'guttie' ball around 1850. The spread of the railway network and the much publicised matches between the Dunn's and the Morris's also had a significant influence on golf's advancement.

Since the late 19th century golf has enjoyed various surges in popularity, as well as periods of decline brought about by two world wars and economic depression. The phenomenal rise in golf's popularity in the USA and the advent of TV coverage during the early '60s brought a resurgence of interest to our shores, which was further enhanced by the arrival of celebrities such as Palmer and Nicklaus. In fact it was Nicklaus who did much to encourage more American professionals to play in The Open Championship, despite its then 'sagging' fortunes, and for this the R&A are eternally grateful. The emergence of European players and the effect of Ryder Cup victories, along with increased leisure time, has led to a dramatic rise in the game's popularity. People from all walks of life are eager to tread new ground and, subsequently, golf is currently being played by well over a million people, with many more attending driving ranges and pitch and putt courses, making it a multi-million pound industry.

To many observers, it would appear that the game is in a healthy state. Most private Clubs have long membership waiting lists and public courses are played from dawn till dusk, often with players sleeping in cars overnight in order to reserve a tee time later in the day. The reality is that many wishing to take up the game can neither apply to join or play at a private Club, as they do not have a handicap. Public courses are few in number and it is tiresome obtaining a tee time booking, especially in the more populated regions. It is this dilemma which the R&A recognised, leading to the conclusion that many new courses were required.

At first glance the solution appears relatively simple. Since agriculture is proving less profitable due to EC quotas and falling grain prices, many farmers can sell off surplus land to enterprising developers or indeed finance course construction themselves. A recent survey indicated a vast untapped market ready to take up the game, so it would appear that

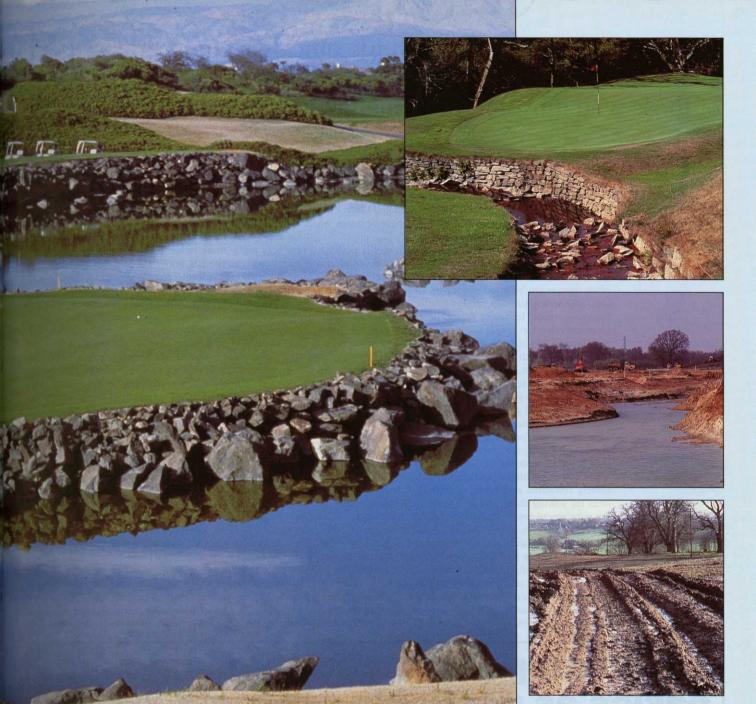


Supply

'The days
when
enthusiasts
met to
discuss
forming a
golf Club
and creating
their own
course are
probably
gone
forever'

turning fields into fairways was as safe a bet as initial investment in electricity shares. A number of local councils have been practically deluged with planning applications, but are not quite as sympathetically inclined as previously, especially where many applications had proven to be 'back-door' approaches to building hotels, housing, conference centres and the like. Proposed new ventures are now met with tighter controls, with the question of golf's environmental impact one of paramount importance for planning committees to consider.

The days when a group of enthusiasts met in a local inn to discuss the forming a golf Club and creating their own course on nearby land are probably gone forever. The majority of new ventures are either 'pay as you play' – often quite expensive and with little or no private membership or exclusive American-style country Clubs offering a range of five star facilities. In some areas there appears to be a



and demand

plethora of the latter, some with adjoining hotels, all vying for a slice of the same limited market. Some, like East Sussex National, have been the centre of much media coverage and indeed golf can be played at East Sussex National on two immaculately maintained courses, but it will cost the earth for that privilege.

One of the main problems facing the industry today is that too many 'executive' style courses are being built at overinflated cost, often designed by ex-tournament professionals who have become self-acclaimed golf course architects seeking a living by other means. These 'signature' courses have a glitz and glamour approach, with the aim of producing even more spectacular courses seemingly for the sole benefit of being photographed for glossy magazines, which help to increase membership and sell a few adjacent houses. Many have become 7,000 yard monsters and are far too severe and demanding for the vast majority. They also tend to be

maintenance nightmares, requiring an almost unlimited budget, which in turn must be reflected in the cost of memberships and green fees. It comes as no surprise that many such ventures have either collapsed or are facing financial ruin, as potential customers are frightened off by the exorbitant costs featured. Indeed, many such courses have been forced to reduce green fee charges considerably, merely in order to survive.

Similar projects are unlikely to get off the ground as the current recession bites deeper, the reality being that there are just too many of these 'top end of the market' ventures. The escalating costs in once favoured regions such as the Algarve and Costa Del Sol (now nicknamed Costa too Much!) should have rung alarm bells for the developers back home. It is beyond doubt that the average British golfer is just not prepared to pay the vast sums demanded, and this has resulted in these sun-drenched courses playing host GREENKEEPER INTERNATIONAL March 1992 11

Main picture: High cost constructions will push fees beyond the reach of most golfers.

Top: Picturesque, but possibly too difficult.

Centre: Constructions on this scale need to be well financed and planned, and, lower picture, this way of contouring fairways may beat deadlines but at what cost to soil structure?

'All too often courses are built too quickly by inexperienced contractors, attempting to meet project deadlines and oblivious of those who must follow to maintain such 'creations'.'

Supply and demand

mainly to Germans and Scandinavians – often high handicappers – who take in excess of four hours to complete a motorised round and are quite willing to part with large sums for the privilege. However, even in Spain the bubble appears to have burst – as both hoteliers and golf Clubs have found to their cost – and there are many new ventures 'on hold' awaiting financial investment.

The other main problem facing the industry is perhaps even more damaging. I refer to the actual construction and specifications used in creating these new courses. All too often courses are built too quickly by inexperienced contractors, attempting to meet project deadlines and oblivious of those who must follow to maintain such 'creations'. Contours are often too severe and reveal scant regard for future maintenance, as also do green surrounds that are often an afterthought, with bunkers having more in common with front line trenches. Materials used in green construction are seldom properly tested for particle size, porosity and bulk density, with sub-standard local soil mixed with sand from the nearest gravel pit often being used in the mistaken belief that this saves time and money. It is little wonder that seedtake is poor and 'ponding' and compaction occurs so readily after play begins, resulting in the use of temporary greens on a brand new course!

Once the 'architect' and contractors have been handsomely rewarded and have headed off to another site, the onus for solving these problems falls upon the shoulders of the poor greenkeeper. Sadly, this scenario is all too common and still continues to be the case up and down the country. Even with the availability of modern technology and research there are probably more badly constructed courses now that ever before. It therefore comes as no surprise to learn that at least one client is attempting to sue his contractor for failing to deliver the goods. In most instances these problems could easily have been averted by using qualified personnel and seeking proper advice in the first place. All materials need to be laboratory tested to meet necessary criteria, with designs critically examined to assess their suitability.

Perhaps there is a need to look beyond our shores for guidance as to the direction our beloved game is heading. In France, 75% of all new courses are aimed at the public sector and built at an appropriate cost. Even in the USA there are very many more public courses per head of population compared with the UK, with most playable for a very modest dollar output indeed. The real need in this country is for more low-cost public or pay as you play courses, offering membership at realistic cost, as well as numerous par three and nine hole courses which would encourage family participation or the occasional leisurely evening round. Both architects and developers should turn the clock back and stop trying to emulate Augusta National or Pine Valley!

St Andrews is a shining example of how this may be achieved; namely courses that may be enjoyed by every standard of golfer. Courses do not need to cost several millions to build, nor do they need the tag 'championship' listed in their sales brochure. A well drained course, including properly constructed greens and tees and capable of accommodating at least 40,000 rounds each year and offering a moderate test of golf can be built for under £1 million, inclusive of irrigation to greens and tees. The course should also be capable of relatively quick and efficient maintenance within a modest budget, which can then be reflected in the cost to the golfer.

There will of course always be a need for a few 'up-market' country Clubs, but they should be minimal and built only to satisfy a genuine need. If the average golfer is not to be 'priced out' of the game, there must be a realism attached to the direction in which the game is heading. Only then can we claim that the real 'Demand for Golf' is being met.

 The author, Laurence Pithie, is course manager at Minchinhampton Golf Club and is Britain's first Master Greenkeeper.

Greenkeepers forced to go back to basics as pesticide products dry up

nce upon a time there was a reasonable choice of pesticide products available to the greenkeeper. Though new products were always slow in appearing, the big agricultural producers made available some of their new products for the smaller specialist companies to develop for the turf market and there was always regular dialogue; with products being granted back-to-back registration. With others, some interesting joint development programmes were undertaken.

With ever tightening budgets for development and the increasing demand for more information about efficacy and safety from MAFF for Approval purposes, products nevertheless came onto the amenity market, slowly but surely. Quite rightly, the emphasis is now on having products that are as environmentally friendly as possible and on them being applied through more accurate machinery.

But what has happened? Has the amenity sector been abandoned because of its traditional low demand for pesticides? We seem to be going into reverse, with products being discontinued because of the non-availability of raw materials, together with mysterious periods of product shortages due to 'supply difficulties'.

The weeds, worms and diseases are not going to go away, in fact there are indications of an increase in the number of problems occurring, especially in grass grown on special cultural media and 'foreign' grass mixtures. Where are all the new bio-control agents developed for use in turf? We hear of great strides being made in bio-control in commercial horticulture and if bacillus thuringiensis is now commercially viable as a product to control caterpillars, I must ask where is the work to evaluate a similar product to control chafer grubs in turf?

If amenity horticulture is not a viable market for the development of new specialist products that will be environmentally acceptable, I would like to hear from those who might have been in a position to help but won't or can't, possibly because the 'big boys' will not make their products available.

Is there a more sinister side to this conundrum? Some of the big chemical producers

are on the other side of the channel and one wonders if they are aiming to strangle our very important small, indeed some not so small, specialist producers and create a monopoly situation after 1992?

The real worry in all this is that the enterprising greenkeeper may well be forced to revert to practices of many years ago to control pests and diseases. Already we hear talk of some that are using home-made remedies or using approved products for nonapproved purposes.

It is sad to see these potentially dangerous and illegal practices creeping back in a profession that elsewhere is raising standards to new heights.

So come on, let's hear it from the manufacturers – what are you doing to help the greenkeeper? Or have you abandoned us and are without the courage to say so?

• The author, Jon Allbutt, is a regular contributor to the pages of Greenkeeper International. He is an independent practitioner in the fields of testing and training pesticide and herbicide application methods and in unravelling the mysteries of ministerial regulations. A Greenkeeper International tribute to supporters of the Greenkeeper Education and Development Fund.

Number 1: COLIN GREGORY, formerly of ISEKI Ltd.



here's a tale often told which features The Pope and Colin Gregory and of Colin being called to the Vatican for an audience with Pope John Paul II. With the audience nearing completion, Colin escorts John Paul II out onto the veranda of the Holy Palace, high above the thronging masses that congregate there, the better to receive the cheering accolades. The crowds are suitably impressed including a group of British tourists clustered at the very back of St Peter's Square, looking on in awed silence. Finally, unable to contain his curiosity any longer, one tourist turns to another and asks: "Who is that on the veranda?" "Don't know who the big fellow in the white robe is," comes the reply, "but isn't that Colin Gregory beside

If this seems a bit of a tall story, there is nonetheless an element of truth encapsulated - for Colin Gregory is the very epitome of the character who is known by everyone and who equally knows everyone and everything (or knows a man who does!) - he's a veritable walking memory bank.

To further illustrate the point, I'll tell of the time when playing golf with three greenkeepers, some 400 miles from home and on an unfamiliar course. On my back swing I became aware of a car stopping nearby and of a face peering out to witness my less than classic execution. I stopped in mid-swing and a voice laughingly observed "I could never forget a swing like that - how are you, boy?" Yes, it was Colin Gregory, a man I had only met once before and who just happened to be passing by! "Did you know who that was," I later asked my colleagues, "yes, of course", came the unanimous reply, "everyone knows Colin Gregory!"

To greenkeepers, Colin is perhaps best known as the man behind the Iseki Tournament, though he is and indeed always has been associated with our industry; right from starting work. Now beginning a new phase in his career as Managing Director, Hardi Ltd, we met again recently and he

told me something of his interests and ideals.

Colin was born into a Norfolk agricultural family, his father a branch manager with Dalgety, and began his career at Ransomes, Sims and Jefferies Ltd in 1966 as a "poor, underpaid apprentice", going through the works, progressing to the experimental department and at aged 19 entering into 'Service Department - Agricultural'. I said that the man has a phenomenal blotting paper-like memory, and this was borne out by his actually lecturing to dealers within weeks of being trained in the Combine Training School - a 19 year old whizz kid! Still an apprentice, at 20 he moved into the sales office as the link man for A to E clients and with the apprenticeship over at 21, Colin was quickly transferred to southern Ireland to help develop sales, both there and in Northern Ireland as well.

Three years and many, many sales later, this adopted leprechaun conducted his craft with consummate skill - often over a pint or two of Guinness and late into the night, as is the Irish way - before returning to England and a new post with Lely (the interview gleefully conducted with John Hawkins at high speed whilst travelling on the A1), as northern England and southern Ireland Area Manager.

The dealer network, then principally agricultural, continued and grew, for those were pioneering days when the sales force trailed their wares behind a company car and Colin was instrumental in introducing Cultiseeders, Buryvators, and a Turfsprayer - his first introduction into the turfcare market - for Lely. Chance often plays a part in any career progression and in 1979 Lely took on the franchise for the innovative Iseki range, which was introduced at the Highland Show. Jack Wilkinson, the man who started the new company, Lely Iseki Tractors, left suddenly and Colin became sales manager almost overnight, taking him headlong into the fine turf care market full time. In a span of six years the sales of Iseki tractors grew by some 300%, largely

Of Colin and the BIGGA connection there is a record of success from the very start



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manage and maintain

starts here.

through Gregory inspired intensive demonstrations and vigorous marketing, this success not surprisingly attracting interest in Japan. In 1985 the parent Iseki, intent on setting up their own UK operation, had meetings with John Hawkins (then MD of Lely) and Colin Gregory, resulting in the formation of Iseki UK Ltd, with John and Colin as sole British shareholders, in 1986, the business opening in St. Neots and moving in 1989 to Bourn in Cambridgeshire. John Hawkins had always declared a wish to retire at 55, and in 1990 he did so, this bringing a Japanese managing director, the first of two such Japanese Nationals, in his wake.

Colin, however, remained the driving force of Iseki, and of the hugely popular Iseki Tournament, until fate once more took a hand, strangely enough, again from a man bent on retiring from business and casting his net for a worthwhile replacement. Literally 'headhunted', Colin was whistled into the top job of Managing Director, Hardi Limited, just a few weeks ago and it is at Hinckley, Leicestershire that the wheel turns full circle.

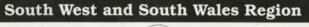
Of Colin and the BIGGA connection there is a record of success from the very start, when a decision was made to bring sponsorship by way of the tournament in 1988, beginning at St Pierre, followed by equally successful events at Moor Allerton, Moortown and most recently at Hillside. I fancy he is something of a would-be greenkeeper himself, for his enthusiasm for the Association and its cause knows no bounds. He positively bubbles with eagerness over our growth, sings the praises of BTME as much as if it were his own baby, and is totally committed to our ideals.

Of the man himself, like almost everything he touches, he

seems to have a grand and clear cut plan. He married the delightful Rosemary back in his early 20s, following a courtship that began when he was first nursed back to health by her in a Norwich hospital. He's a keen though very occasional golfer, left handed like myself, with an eagerness to see his son Paul (13) into his hometown St Neots Golf Club and moving toward a 'proper' golf swing, "unlike yours and mine," he chuckled. He positively dotes on daughter Rachel (16), loves gardening and caravanning and, not surprisingly, loves his work.

I said the man has an amazing memory, and this was proved when he took me on a whistle stop tour of the Hardi building. In a little over one week he knows everyone by name, reels off specifications and part numbers with consummate ease and knows the vast range of Hardi spraying products (and their every application) by heart. He's an early bird, treasuring the brief period between seven and eight before 'phones start jangling to recharge his thought batteries and prepare for the day ahead. I asked him to account for his success in what has always been a highly competitive market. "Knowing the product thoroughly is vital," he said, "together with understanding fully the needs and demands of those in the marketplace. This, coupled with a relaxed, non-pressured, atmosphere creates confidence." He then added, again with the typical Gregory chuckle, "and, of course I never forget to ask for the order!"

His immediate aims at Hardi are equally clear cut. He will increase Hardi's share of the agricultural market and develop and expand the amenity market. As they say in all the best movie success stories - this will be a saga that will run and run!





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FUNGICIDES

What they are and what they do...

The management of golf greens is a difficult enough task at the best of times, but just when you think you have things under control (and that includes the golfers!), along comes a funny-looking patch of discolouration right in the middle of the green - an attack of disease! But which one and how should you treat it? Sounds familiar perhaps, but it happens to even the most organised and professional of greenkeepers.

Thankfully, frequent articles and literature from manufacturers and other technical sources, largely with excellent graphic illustrations, have prepared most greenkeepers and they quickly recognise the disease characteristics and apply the appropriate treatment. Even if the disease is not identified there is excellent help at hand in the guise of Neil Baldwin at the STRI, together with various highly competent manufacturers representatives.

But why do we get the attack in the first place? Dr Beard from the USA once said that within the turf sward there lived in perfect harmony every organism known to man. Suddenly one of them multiplies and the balance is upset and a disease attack occurs. This can be caused by several different factors ranging from soil pH, plant health and fertility through to weather, the overall environment on the surface of the green - even the type of bunker sand used.

Every day our management influences the balance of these microbes, but we cannot control them. Balanced use of the correct quantity and type of fertiliser will influence growth and inner health, whilst mechanical treatments will reduce surface moisture concentrations and increase root activity - though along with the marching army of golfers this can create wear or physical damage by bruising the plant, all of which may make it more vulnerable.

Fungicides help us to limit the damaging effects which an explosion of one or other microbe might cause, doing this by effectively killing them, either singly or in groups, and achieving this by 'contact' or 'systemic' action. Different chemical components attack the microbes, reducing their numbers and altering the balance - and thus bringing about a balance that is more stable. A potential problem exists with the use of these fungicides in that over-use of single chemical groups can produce resistance in the disease. We have all heard of Warferin resistant super-rats and of rabbits that can survive myxomatosis - well now Mother Nature has fought back on the turfgrass disease front as well and indeed there is even poa annua that is resistant to paraquat!

The most effective fungal control is one that will - 18

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AD REF

Fungicides

16 reduce those conditions that may encourage an attack. Alkaline surface conditions may encourage fusarium, for example who has fusarium around bunkers (which are filled with high pH sand)? In addition, take-all patch is predominantly a problem on high pH greens.

Each and every disease has its own set of preferred conditions which aid its rapid development. Unfortunately conditions to reduce one disease may assist the development of another, for example autumn nitrogen of the wrong type and out of balance with other nutrients can encourage fusarium, whilst the presence of nitrogen in winter can suppress anthracnose.

Careful selection and application of materials can help: the use of iron to toughen the plant from the outside is well known and widely used, but what of potassium for cell wall thickening and therefore protection from the inside?

Work in Australia has concentrated on selecting the appropriate 'antagonistic' organism from the soil, multiplying it and re-applying it in a top dressing to effectively attack the disease biologically. At present there are no known top dressings commercially available incorporating this system but such introduction must only be a matter of time.

Work in the USA has developed along the route of organic fertilisers, which are thought to encourage the development of micro-organisms antagonistic to turfgrass disease causing factors. These may also be an aid in disease control by providing additional nitrogen to the plant (a point mentioned earlier), but as yet the actual mode of action is unknown. Current work on this front has shown some suppression of dollar spot and brown patch on bent-grasses, but there is still some way to go in producing effective recommendations.

Do not write off chemicals. All manufacturers are actively looking at new actives (and at new uses for old ones), with undoubtedly one of the more interesting developments being the use of microbes to manufacture actives. This has the advantage of reducing harmful wastes and producing purer actives which can truthfully be said to have been 'naturally made'!

The first herbicidal product to be made in this way is already marketed and in use in agriculture and is proving very effective

In summary, may I suggest that greenkeepers should be vigilant in avoiding conditions that favour disease whilst encouraging those conditions that hinder such diseases, and avoiding the possibility of chemical resistance; perhaps by varying the chemical groups that are used.

Finally it must be a case of 'watch this space', for it will only be a matter of time before alternative treatments and methods are here to help us.

● The author, A John Hinton, is the amenity specialist for Kings Horticulture Ltd.

Something to say? Share your thoughts on any greenkeeping matter with readers of the industry's most respected magazine. Send your letter to The Editor, Greenkeeper International, 13 Firle Close, Seaford, East Sussex BN25 2HL.

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■ Chlordane demise 'fraught with problems'

■ I refer to the article 'The Worm Keeps Turning', which appeared in December, and to the manufacturers reply on availability of 'Castaway Plus'. Despite protestations of the product being as 'readily available today as it has been for some years', the real truth is that the product is not available. A recent letter received from the manufacturers states "due to tremendous demand for this product during the latter months of 1991 we have, temporarily, sold out of this product". It does not take too much intelligence to realise that they have either been caught with their marketing pants down - or they are trying to pull a fast-one! Only a fool could fail to realise that demand was bound to be higher, since the option of a wettable powder is, by me anyway, backward and unacceptable.

Jon Allbutt is right in his assertions, the demise of Chlordane is fraught with problems, and the options that are available, eg. Controlled Droplet Applicator (CDA) Castaway Plus and wettable powder Twister are, in my opinion, lesser attractive alternatives. It was interesting to also note in their letter that they suggested changing the order to one of these alternatives. I am of a generation that has grown up with the ability to see straight through such transparent ruses and I am not amused!

A CONCERNED GREENKEEPER
Name and address supplied

■ I write to extend my thanks to the Scottish North Section for their excellent idea of providing funds toward expenses for two regional members to attend either a major BIGGA conference or seminar. Being positioned remotely on the map, attending something of this nature would not normally be considered by a great many in our area. The idea of a section competition, answering greenkeeping questions, is quite an ingenious way of providing a prize, one that enabled the winners to broaden their greenkeeping knowledge.

Needless to say, my trip to Harrogate for the BTME was both very enjoyable and worthwhile. I obtained new information from various seminar speakers, kept my ears open for invaluable tips from proven greenkeepers and other members of the trade and made many more friends. I look forward to returning to such an event in the near future.

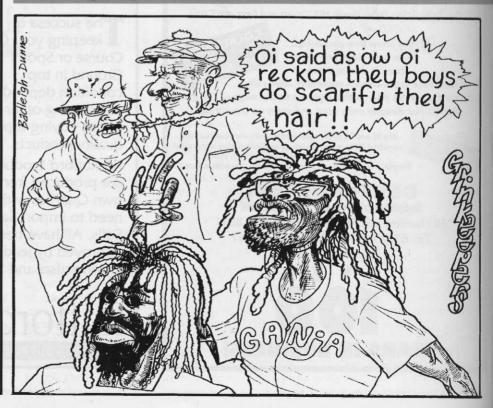
GEORGE PATERSON
Fortrose and Rosemarkie GC

■ May I take this opportunity through the magazine to say a few thank-yous. First, to the committee of the North Section (Scottish Region) for giving me the opportunity to attend BTME in Harrogate in January. I had a most enjoyable week and gained valuable knowledge which, no doubt, will prove beneficial to me in the future.

I must also pay tribute to some of my colleagues who made it such an enjoyable week, especially my room-mate, Dougal Duguid.

GORDON I McKie Tain, Ross-shire

Badleigh-Dunne



Letters

Looking forward to UK Spec ■ Success of 'Harrogate Experience'

■If the vast number of consultants and 'experts' who advertise are a good as they claim, why in the golf course building boom do we see so many courses (and alterations to older courses) undertaken with such poor specifications and elementary errors in design and construction?

In many cases it appears not only to be the clients wish alone to reduce costs, but also a contractors eagerness to maintain a higher profit margin. And who picks up the long term legacy? Well, I think we all know the answer, don't we? One of my main concerns is the amount of money that some are taking from the game and business of golf as a whole, whilst putting nothing back.

This brings me neatly to another related matter brought to my attention recently. A well known design and construction company, perhaps faced with dwindling construction work, is 'diversifying' into contract course management and is touting for business. First they write to all those whose courses they have constructed, offering to report on how a course built to such 'high standards' is in such bad condition, invariably claiming to be due to the incompetence of current maintenance staff and equipment employed, and offering to turn the situation around. This of course, only if they take over the maintenance lock, stock and barrel - rendering the current workforce and machinery redundant!

This very nearly happened at a fellow greenkeeper's course, and having seen it during construction (cutting corners, following doubtful specs., using dodgy sand and spent mushroom compost for greens and turfing with turves grown on a clay/loam base etc.), taking all things into account the course was coming along quite splendidly after many early teething problems. When the owner saw the report however, he was on the brink of firing everyone and taking the contract. Fortunately, an independent observer took the trouble to examine the course along with the head greenkeeper, the owner, and the report, and was easily able to convince the owner of the folly of any such action. Normality has been restored, but the warning remains and greenkeepers and course owners should be on their guard for unscrupulous sharks.

On a happier note, it is good to note that some results may come from the STRI green construction trials and perhaps one day we shall see a universally agreed UK Spec., taking full note of those pioneers who have successfully constructed hundreds of perfectly specified greens, and hopefully one that will not mean as many different things as the oft misquoted and misunderstood USGA Spec. seems to mean to many constructors. It cannot come a minute too soon.

PAUL COPSEY Barnehurst GC

■ I was privileged to be the key note speaker at this year's BIGGA Turf Management Exhibition and Conference held in Harrogate. As a speaker who visits many of these events all over the country I thought it appropriate to write and congratulate all those concerned in its organisation.

It was a very professional event in which all greenkeepers should be proud to be associated. for my part I hope that my presentations, which were designed to help with the sometimes difficult green committee, proved to be helpful and useful.

I wish your readers all the very best in 1992 and the "Harrogate Experience" continued success.

GRAHAM PHILLIPS The Marketing Group, Warrington, Cheshire

■ As a recently joined associate member of BIGGA I feel I must write following a wonderful week at the BTME at Harrogate, which was a great experience for me. I attended workshops for two days, following these with excellent seminars and a wonderful exhibition – all of which I found very educational.

The education available for greenkeepers is splendid, but how about some for, say, ordinary Club members such as myself, who may not realise the pressures which green staff at all levels have to endure. Would it be possible for a BIGGA 'rep' to organise a 'winters night' at Clubs around the country and thus help us to understand some of those pressures?

Now I am looking forward to the National Education Conference at Cirencester, where I am hopeful of gaining yet more knowledge and perhaps meeting up with other associate members.

AILSA WADE Glasgow

CHEMICA CALCULATIONS

When you use a chemical product, do you really know what the accompanying information means?

As my company expands into Europe, much of my time is now spent visiting golf courses on the continent, which is both enjoyable and challenging. Enjoyable because I visit some beautiful golf courses set in delicious scenery and challenging because I find the European greenkeeper to be knowledgeable and yet demanding of still further knowledge.

Before I started such visits I had the ill conceived opinion that greenkeepers across the Channel were vastly inferior to their counterparts in the UK. In reality I have found their knowledge and quest for knowledge to be far greater than that of the average British greenkeeper.

Quite frankly, my original opinion of the European greenkeeper could be summed up by a headline which appeared in The Times newspaper some years ago when a thick peasouper fell over the Channel: "Thick fog in the English Channel – The continent of Europe is isolated". In other words – UK was the most important and best.

I still believe that the UK is the best in the world of golf and that the British green-keeper still produces the best turf grass playing surfaces in the whole of Europe. However, I am not quite so convinced that they all know how they produce these surfaces, or what they are applying to their turf.

Their confusion may well be aided by the 20 to 30 or more companies producing so-called fine turf fertilisers. In reality, only a handful of these companies will have carried out meaningful trials and consequently be able to pass on useful and accurate information to the greenkeeper. Often the only benefit some of the 'fine turf fertilisers' offer the bemused greenkeeper is a lower cost when compared with another product. However, if the products do not do the job required of

them, low cost is of no benefit at all and cost should be one of the last considerations to influence the greenkeepers decision. The key question the greenkeeper should always ask is 'what product do I need to purchase to obtain the desired end result'.

On the continent, educational standards are such that greenkeepers are given the knowledge and expertise to quickly identify which product they need and, of equal importance, which products are not suitable for their course. Greenkeepers in Italy begin work on the course with this type of information – for they are not allowed to be classed as a 'greenkeeper' until they have attended the Italian Golf Federation School for Greenkeepers. I am regularly asked, for instance, for the full breakdown of my company's products (a question I cannot ever recall having been asked in the UK), including how much of each of the following are present:

- · ammoniacal nitrogen
- · ureic nitrogen



CHEMICAL

CALCULATIONS

- · nitrate nitrogen
- · slow release fertiliser
- · organic matter.

From this type of information the greenkeeper can start to decide on precise fertiliser requirements: remember a mixture of ammoniacal and ureic nitrogen are considered to be less encouraging to poa annua than nitrate nitrogen. Slow release fertiliser content is another common discussion point, in particular the question is asked: what percentage of the nitrogen content is in the form of slow release? At least 40% of the nitrogen in a slow release fertiliser should be in the form of slow release for the full value to be achieved. If it is less than that, it is hardly worth paying for!

Organic fertiliser is another case in point. Ask if a product is really 100% organic, or find out if it is just malingering under a "green" umbrella. A sales person should be able to supply all this type of information – and if not, they should be able to obtain it very quickly. If they cannot supply the information – don't buy from them!

Having gathered all the essential information, the greenkeeper can begin to establish his programme for the year using kg/units of nitrogen, phosphate and potash etc. Research has shown that turf requires:

Nitrogen: 100-250 Kg/ha (10-25 gms/m2) per annum;

Phosphate P₂0₅; 20-50 Kg/ha (2-5 gms/m2) per annum;

Potash K_20 : 80-150 Kg/ha (8-15 gms/m2) per annum.

Sand greens will require higher rates of nitrogen (approx 300 Kg/ha) and potassium will be at the higher end of the recommendations. In both sand and soil greens, phosphates and potassium requirements should be dependent upon soil analysis.

So when you are presented with a compound bag of fertiliser, how do you work out what its nitrogen, phosphate and potash values are in kg/units per hectare? On the back of the bag you will find a panel with

the declaration contained thereupon, for example:

Nitrogen14 Phosphorous Pentoxide P₂0₅

If there is a requirement to convert $P_2O_5 - P$ or $P - P_2O_5$ the equation is quite easy:

 $P \times 2.9 = P_2 O_5 : P_2 O_5 \times 0.44 = P$ $K \times 1.12 = K_2 O \times 0.83 = K$

As a further example let us take a spring and summer fertiliser 14-2-4 applied at 35gms m2:

35 gms/m2 = 350 Kg/ha of total product (35 gms x 10 = 350 Kg/ha.

To find the nitrogen take 350Kg/ha ÷ 14% = 49 units of N per ha. To find the P_2O_5 take 350Kg/ha ÷ 2% = 7 units of P_2O_5 per ha. To find the K_2O take 350Kg/ha ÷ 4% = 14 units of K_2O per ha.

Look at a complete range of fertilisers and select the products that fulfil your requirements, remembering that fertilisers may be mixed and matched to give you exactly what you require for an annual treatment. For instance, there is no reason why an autumn fertiliser should not be used in summer time if this achieves the desired goal.

To give an idea of unit figures from a complete range, see the examples at the foot of this page.

Many greenkeepers in the UK are already using the kg/unit method of assessment, though many are not. In continental Europe it is the norm. If we are to raise our technical standards then we must ask questions and demand answers. Let us again prove that here in the UK we have the best golf courses run by the best greenkeepers, that we lead the way in the golf world in Europe and beyond and can show that 'fog in the English Channel' is not a problem.

● The author, G Keith McKee, is European Turf Advisor, Fisons plc, Horticulture Division.

The second secon		N	and the same of th	per hectare P ₂ 0 ₅		K20
Spring and summer	14	(49)	2	(7)	4	(14)
Mosskiller	14	(49)	0	(0)	0	(0)
Turf tonic	7	(25)	0	(0)	0	(0)
Super N	24	(84)	0	(0)	0	(0)
Zero phosphate	14	(49)	0	(0)	7	(25)
Autumn	6	(21)	4	(14)	12	(42)
A typical feed programme	could	be:				
		N		P205		K20
Two dressings turf tonic		49		0		0
Two dressings super N		168		0		0
One dressing autumn		21		14		42
TOTAL UNITS		238		14		42



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Saving time with TURF

Seed or sod? DAVID WHITE speaks to leading turf growers who point out the pluses of staying with the sward

Wherever two or three greenkeepers are gathered together the topic of discussion will eventually come around to the age old saw of seed versus sod, which is best?

At the BTME I was able to ask several turf producers for their considered opinions. To begin, Stuart Mail of Lawn-Tech admitted to being a relatively new entrant into this industry and further confessed to having a fairly analytical standpoint which suggested that both seed and turf have an important and commercially viable place in golf applications. He began by saying, "The first thing I was told when I became involved in the turf business was that 'people who buy turf don't buy grass – they buy time!' Claims of seeded areas being playable in a few months, or even weeks, are often heard; but in reality seeding takes a minimum of *nine months* longer to reach an equivalent level of density, maturity, and durability compared with good quality cultivated turf." This was further endorsed by Stephen Fell of Lindum,

who pointed to the pressures under which new courses are often placed by seeking to open for play as soon as possible – often even before the timing is right – when greens and tees are early pressure points. Turf in this situation would give the new owner a head start of at least six months over seeding, or even more depending on the time of year. Stephen was quick to point to the close liaison that turf growers enjoyed with seed producers, of the great advances made in breeding new varieties, and of using top STRI listed varieties and picking the best crop free lots of those varieties – clearly indicating that turf producers are good bed fellows with their seed breeding counterparts.

Turning to Rolawn's Rachel Semlyen, I learned of visits to Rolawn's production fields, where greenkeepers were able to see if what they produced was what was wanted. She told of listening and responding to their suggestions and how this resulted in mowing the greens turf shorter, of boxing

'All were firm in their conviction that turf was financially a better bet... a faster return on capital through memberships, fees and so on; reduced interest charges; and the reduction in potential loss of members'

the clippings and scarifying and verticutting where necessary, and of mowing up to four times a week in order to satisfy their most exacting requirements. The result is claimed to save as much as a year of preparation for play, with greens being ready to play in as little as nine weeks from laying.

All were firm in their conviction that turf was financially a better bet, Stuart Mail summarising by reference to a faster return on capital through memberships, fees and so on; reduced interest charges on finance; and less tangibly, the reduction in potential loss of members or frequent users through inconvenience or delay. He made a further pointed reference to harassed greenkeepers by suggesting that valium was not tax deductible!

On to production, Derek Edwards of the Inturf Group said that ten years ago some 90% of the turf market consisted of 'improved' pasture or meadow turf, much of which was grown on soil with a high silt or clay content and virtually unsuitable for any sporting purposes. The dramatic swing away from meadow turf, and to some extent that of seeding, being influenced by heavy investment in large scale purpose-grown production of turf on selected sites. These sites are situated mainly down the eastern side of the country (because of topography and generally lighter soils), but are aimed at supplying markets nationwide. Several thousand acres of production are used by the major suppliers, with smaller, more regionally based growers following suit and between them they have now all but seen off the old style



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When looking for turf it is important to ask for a mechanical analysis of the soil that the turf is grown on... those turf growers with a concern for the needs of their customers will be able to supply one...'

meadow turf market, which really only satisfied low cost housing and landscaping and maintained the huge demand for seeding of specialist areas, including virtually all sporting applications.

Raising the question of soils, Derek Edwards was forthright in pointing to the potential problems that can arise by applying soil-grown cultivated turf onto prepared areas of a different soil type – a problem that, of course, does not exist when seeding. The most obvious is by transplanting a loamy or heavy soil based turf onto a sandy turf bed. However good the quality of grasses contained in that turf, drainage will be impeded and a weak interface caused which would result in poor sod adhesion (ie. a root break zone could exist) and subsequent loss of grass under heavy usage. This risk can be minimised by specifying soil type as well as grass type when ordering and he insists that by placing an order with one of the leading producers, they will not only understand your requirements but almost certainly guarantee a good result.

In counting costs, Rachel Semlyen made the valid point that multiple applications of herbicides are often necessary on seeded areas whereas turf should not require any for some years. Stuart Mail and Stephen Fell were both agreed that seeding can undoubtedly produce an equally good final result, but as Stuart pointed out, when buying turf the producer has taken the seeding and establishment risks of failed germination, erosion, pests, disease and weed invasion on your behalf. Both Rachel and Stephen agreed, "where green-keepers for perfectly good reasons choose to seed it is in their best interests to study closely the top varieties currently trialled by the STRI and to realise that with amenity grass, as indeed with turf, you get what you pay for."

There was, inevitably, talk of laying applications, the point

being made that the big disadvantage of turfing was always the heavy, back-breaking laying of the sod. The advent of the 'Big Roll' turfing system, introduced into the UK by Lawn Technology and now seen in several different and modified forms, has laid this particular ghost, with Lawn Technology proudly claiming to have laid no less than three quarters of a million square metres with their clever system since its introduction in late 1990!

Unanimous in their enthusiasm for sod, producers echoed the sentiments of Tim Fell of Tillers Turf Co., who opined that when looking for turf it is important to ask for a mechanical analysis of the soil that the turf is grown on. Tim continued: "Those turf growers with a concern for the needs of their customers will be able to supply one. A high specification rootzone material will have less than 25% of particles smaller than 0.25 mm.

"In addition, the material will contain no less than 5% silt and less than 3% clay. The infiltration rate of compacted laboratory samples should be at least 150mm per hour. However, it is very rare that naturally recurring soils meet these specs and so one has to accept a compromise. As long as turf is grown on soils that have no more than 20% of particles smaller than 0.125mm and less than 10% of silt and clay, the chances of success are greatly increased. One fundamental rule is to buy turf that is grown on soil that resembles as closely as possible the rootzone material."

Finally, let Stuart Mail have the last word by suggesting that a visit to farms or obtaining samples will give the opportunity to choose from a wide range of turf to suit your application, in the sure knowledge that 'what you see is what you get'.

"If it is not," he says emphatically, "you can – and should – send it back!"

acknowledges the assistance freely given by Lawn Technology, Tillers Turf, The Inturf Group, Rolawn Turf Growers Ltd, and Lindum Seeded Turf in the preparation of this feature.



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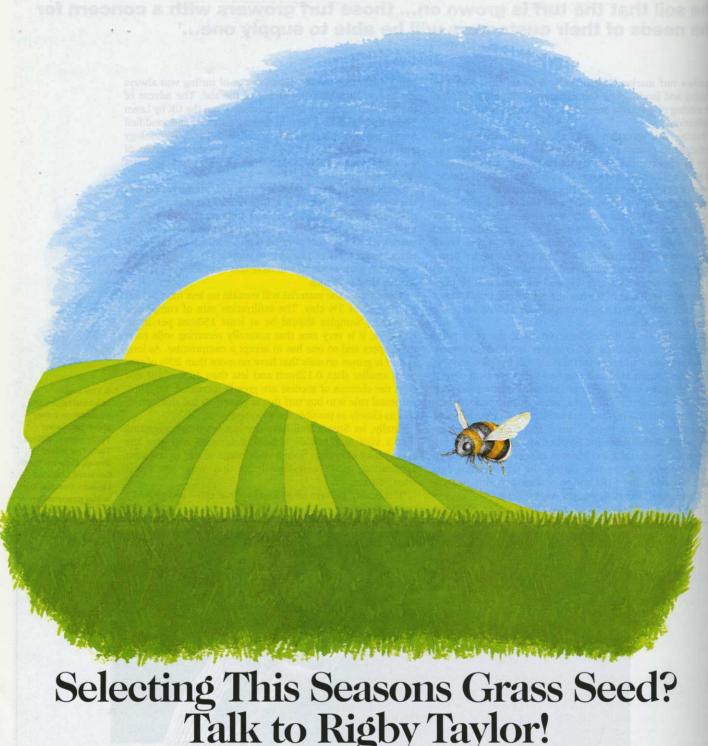
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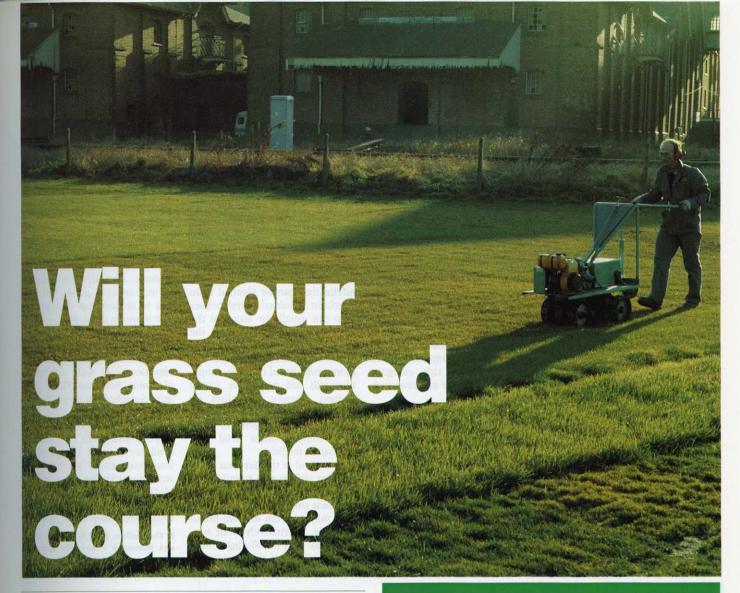
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When it comes to seed, always select the right variety for the task in hand. This is, however, easier said than done, reckons PAUL BILLINGS

he evaluation of amenity grass varieties is a complex issue as it embraces a wide range of features which may vary in importance with the assessor and the expected usage. For example, the wear resistance associated with some varieties may or may not be as important as the minimum cutting height or shoot density of another variety. So how does the greenkeeper select the varieties he requires and, just as importantly, how does he ensure what is being recommended is suitable for the application he has in mind? Clearly, the first thing a greenkeeper must decide are his exact requirements. Let us take some examples - golf greens, tees, fairways and roughs. Obviously, all are extremely important areas but each one has vastly different requirements and management

In the first instance let us consider greens. The fundamental

requirement must be tolerance of close mowing followed closely by compactness or shoot density-Species such as chewings fescue and browntop bents demonstrate these characteristics extremely well. If, however, a variety is chosen which is not tolerant of close mowing then over a period of time it will begin to die back and allow poa annua infestation. Also, if the variety has not got a dense growth habit one will get a poor uneven finish and further increase the possibility of infestation by poa annua.

For fairways the requirements differ markedly than those for greens and, indeed, from course to course. The overriding question a buyer must ask is how many rounds per annum am I anticipating? If the answer is a very large number - for example over 60,000 - then wear resistance is obviously going to be very important and species of perennial ryegrass which show good wear resistance

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combined with excellent compactness and fineness of leaf ratings, will be very suitable. If however there are to be fewer rounds then other attributes such as compactness, slow growth and disease resistance will become more important.

Tees are a very important and specialist area of the course. Variety choice for tees depends on both the size of the tee, the number of rounds and the length of the hole. With a par 3 municipal or pay as you play course, one would naturally expect to see a large number of rounds in all weathers with a great number of inexperienced golfers. On this basis wear tolerance and recovery for divots is obviously going to be of prime importance. For the full length 'members-only' course, some wear tolerance will be required but other aspects may need to be taken into account such as fineness of leaf, slow growth, compactness and disease resistance. Species such as smooth stalked meadowgrass, along with creeping red fescue should be looked at.

Roughs have a rather unique

set of requirements. Management time devoted to these areas is very limited, or even non existent, so the area must be sown with low maintenance varieties selected for their slow growth, a low final height and demanding minimal fertiliser inputs. Species which slot into this category include hard fescue and chewings fescue.

So, once you have defined your exact requirements the next step (and it is a major one!) is to make a firm decision regarding individual varieties. There are several sources of information available to the greenkeeper. These include amenity grass seed salesmen (who will have a certain degree of bias), independent testing stations such as the Sports Turf Research Institute (STRI) and trade organisations like the Amenity Grass

Marketing Association (AGMA).

Also, do not overlook the sound advice that can be gleaned from specialist wholesale seed houses who can usually be found at the key UK exhibitions such as the BIGGA exhibition at Harrogate and the IOG at Peterborough. The more professional of these companies will not only have highly trained amenity specialists on their pay-roll but will also have the additional support of their own comprehensive trial and evaluation facilities.

At the end of the day your usual supplier will be able to guide you towards a mixture formulation that best suits your requirements. This may be from an own-brand range or, alternatively, your supplier may well be offering a mixture from one of the established ranges marketed by one of the

specialists mentioned earlier.

A key point to note with any mixture is that you should be wary if you are offered cheap 'bargain basement' blends. The old adage that 'you get what you pay for' certainly applies to amenity grass seed. If you sow an inherently low grade mixture, containing inferior varieties, then no amount of follow-up management, however good, will help you to achieve top class results. The moral is quite clear – always select the right variety for the specific task in hand.

For information on individual varieties it is well worthwhile obtaining both the STRI's Turfgrass Seed booklet (available for a small charge from the STRI, Bingley, West Yorkshire, BD16 IAU) and AGMA's Merit List which is available free of charge either from your local AGMA member or write direct to The Amenity Grass Marketing Association, c/o The Secretary, 158 The Causeway, Wyberton, Boston PE21 7AR.

The author, Paul Billings, is Product Manager - Amenity Grasses,
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Age of the Anglo-American hybrid

Golf course architect JONATHAN GAUNT continues his series with an examination of the so-called 'American style' and tells how its interpretation this side of the Atlantic resulted in a mismatch of styles... something of a monster

ast month I wrote of the coming of the second Orthodox Age, a transitional period in golf course design beginning in the late 1940s, when several untrained designers and aged golf professionals muddied the waters of classical design, often viewing a move into golf course architecture (sic) as a stepping stone to a new career.

The design of their courses, increasingly built on stony ground with heavy clay soils, was very often basic, appearing as just 'tracks' which were normally long, dull and uninspiring. Monotony was the watchword, with few design features apart from lakes and impossible to maintain 'bunds' around greens. As for following an accepted specification for green construction - such as those recommended by Jim Arthur, the STRI or the USGA Green Section - little or no notice was taken. Construction often seemed to be nothing more than the simple excavation of a borrow area short of the green and pushing earth up to form a raised and featureless plateau (supposedly to aid drainage). Often the banks leading to the green would be too steep and difficult to maintain - or indeed to play the hole - and it would be virtually impossible to hold a ball on the green with a pitch shot. Drainage on the greens depended upon the budget and the designer, but it was often the case that an inferior sub-standard rootzone mix was used.

Although a move soon came towards creating more easily

maintainable course features, designers were increasingly influenced by what was then beginning to be seen throughout the world – either while the pro's were playing tournaments or what they had seen on television – in particular the so-called 'championship' courses and especially the 'American Style'. Unfortunately, by the time 'American Style' had reached our shores it had become diluted and Anglicised, a mismatch of styles and something of a monster.

These characteristics revealed a gross misunderstanding of the principles of good design and construction or of the game itself, especially in relation to the higher handicap player. It appeared to some to be almost a revolt against the classic design style of architects such as Colt and Mackenzie: of their tried and tested principles and of all that had been shown to work so successfully for 50 years. For some reason the new designers knew better – or thought they did. The Anglo-American hybrid style was like a new fashion which only the fickle and foolish would follow regardless. Fortunately there were architects like Hawtree and Morrison who knew that the classic style was best – and they stuck to it, while choosing only to take certain influences from Trent Jones and Wilson which they thought either complemented their own style or improved maintainability.

There appeared to be an obvious lack of understanding of the design principles of American architects such as Trent Jones Snr. and Dick Wilson (who competed ruthlessly for appointments in the 50s and 60s). These men really knew their trade. What was most noticeable about their work was their attention to detail and the incorporation of hazards in relation to the design strategy. Take, as a perfect example, the bunkering style of Colt, the green designs of Mackenzie and of the quality and standard of work undertaken by Trent Jones and Wilson.

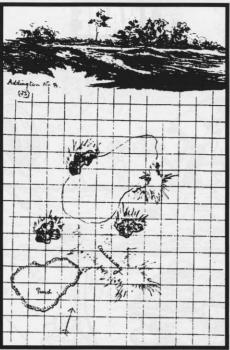
Trent Jones Snr, a trained landscape architect, had been responsible for setting up his own education while at Cornell University, training in subjects directly related to a career in golf course design. Both Colt and Mackenzie had been good competitive golfers with a wealth of knowledge in the rules of the game and construction techniques. Wilson actually built many of the courses he designed.

It was probably because of Augusta National (originally designed by Alister Mackenzie with Bobby Jones in 1933), that Robert Trent Jones began to be widely known throughout the golfing world, for he was employed by the Augusta National Club in 1946 to make alterations to the course. His most notable change involved damming the lake on the 16th and altering the orientation of the tee, a concept which gained him recognition and acclaim for his confident, forthright and exciting design style. Two years later, Trent Jones collaborated with Bobby Jones at Peachtree, and here he designed a course which marked a turning point in golf course design – the course having tremendous flexibility because it could be played In numerous ways – largely due to large tees and greens with features such as mounding and hollows being incorporated instead of bunkers.

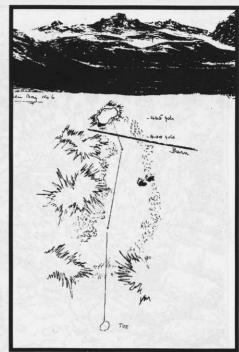
The major difference between the new British designers of the 50s and 60s was that many were coming into golf course design indirectly and were therefore not true professionals, accepted they had flair and exciting ideas, but putting them into practice was where the problems began. This happened in the US also, but often the professional golfers worked with practicing architects – Jack Nicklaus with Pete Dye, Desmond Muirhead, Jerry Pierman and Bob Cupp; Arnold Palmer with Francis Duane, Ed Seay and Xenophon P. Hassenplug (!); Gary Player with Ronald Kirby. By working with the career architects the professional golfers were prepared to appreciate that they had a lot to



A clever one-shot hole. Perhaps the finest hole of its length that exists on any golf course. The 15th at West Hill.



There are three great holes of this length in the London area, 350 yards or thereabouts. Of their kind unsurpassed. This, the 8th at Addington New, is perhaps the best of the three. The others are the 14th at Coombe Hill and the 6th at Wentworth.



The 6th at Cruden bay. This hole is only 445 yards in length, but the green is so constructed that it will not receive and hold anything stronger than a four/five iron unless the wind be against the player.

learn about golf course design, even though they had been playing top-level competitive golf for years.

Machinery became more readily available in construction of golf courses in the 50s for major earth movement work, and together with the trend towards the confused Anglo-American hybrid style, some particularly unattractive results were achieved. A popular feature was the raised convex green and sprawling shallow bunkers. Some really hideous mistakes were made, purely through ignorance. Thankfully, not too many such 'follies' were built in the British Isles, as was the case in the USA, with the excessive use of bunkers and cliches like island lake greens. One thing is certain; no golf courses following this style has become famous for its' good design. There had to be a point where people began to get tired of an accepted style, and as a result try to do something radically different in order to affect change. We must be thankful for this, I suppose. The 50s and 60s were depressing years for golf course architects and designers in the British Isles, (particularly so because of the austere post Second World War years). It was not until the late 60s /early 70s that architects and designers became accustomed to the capabilities and limitations of machinery in golf course construction and maintenance. An understanding, perhaps, of the principles which make a course great as opposed to being just a 'track' was again becoming apparent.

It is because of the influence of Colt and Trent Jones on modern golf course design that we now begin to see the quality of the finished product improve so considerably. Developers are much more demanding, expecting much more from a golf course architect. It is no longer enough for an architect to spend a day pegging out a route of the course with the developer and contractor, followed by the supply of standard green designs which could have been used on a dozen previous courses, never to be seen again until the invitations come for the champagne opening. He is employed as a consultant to provide designs, specifications and bills of quantities, responsible also for detailed contract management to ensure that the work is carried out to those designs. The financial aspect is also becoming an increasingly important consideration because many courses are now set up purely as business ventures, not as private gentlemen's Clubs. They have to provide the developer with a return on their investment. The architect can help the developer to achieve this by planning the most cost-effective way of building the course.

The golf course architect is therefore much more responsi-

ble for the work he produces. It is often said that a good contractor can make a poor design look good, though this should not be the case. An architect should never leave part of his job to the contractor, for he is failing in his responsibilities by doing this. He should be confident that his design and specification will work, whichever contractor builds it. Any contractor, whether he is a specialised golf course constructor or purely an earth-movement contractor, can build a good golf course. If there is proper design, a sound specification and bills of quantities to follow there is never reason for a poor quality course.

When a golfer plays a Colt or Trent Jones course he sees the obvious differences of how such design influences his game, and he compares this to other lesser courses. Only with the golfing public being able to play on courses like these will they start to demand better quality facilities. Then things will improve for all other levels of development, for no golfer enjoys playing off mat tees to temporary greens whilst walking quagmire like fairways.

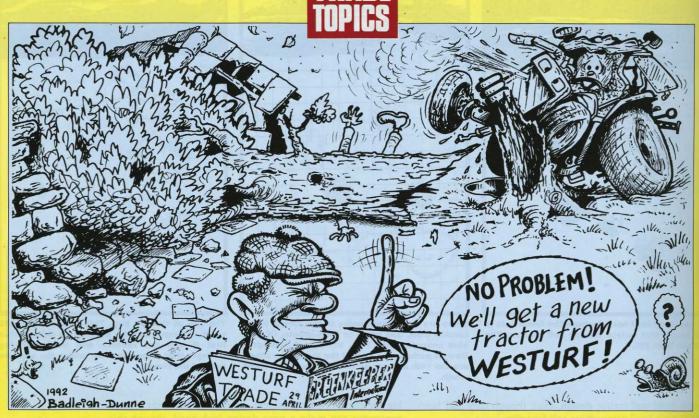
This has gradually evolved into the current situation where not only does the golf course architect need to have a good understanding of design principles and construction techniques, but must also have a multi-disciplinary education, both theoretically and in practice. He will need a firm understanding of how golf is played and of the rules of the game, and the ability to apply his design principles to the romantic ideals of the client in order to make them work on site. He must have experience working on site in order to understand the problems which can occur because of careless design, or because of lack of research into existing site characteristics. Above all he should be aware of the capabilities of the complexity of machines being used to build the course and of the methods the contractor uses to achieve the desired effects demanded by both architect and developer.

A golf course architect has to understand the development of golf course design throughout the years, to appreciate the mistakes that have been made and learn from them.

The sign of a good golf course architect is one who can identify the good things in other designs and adapt these to his own individual style, whilst not plagiarising.

He should also be able to juggle all these disciplines at once without losing sight of the objective: to create a golf course that any level of golfer can find challenging and enjoyable to play, for it is this above all that will encourage a player to improve and to return to the game time and time again.

Continuing his series, Jonathan Gaunt will look next at a favourite architect, attempting to view his design philosophy and defining the style that characterised his work, giving him an essentially individual trademark.



- Avoncrop Amenity Products have been appointed distributors in their trading area for the Barenbrug amenity grass seed range and the new Terralift range of complete organic fertilisers. These will complement their own new range of liquid feeds sold under the Turfgrow label, including their 18-0-0- fertiliser formulated for use on all types of soil and sand based constructions which have adequate reserves of phosphate and potash. Other mixes are readily available. Tel: 0934 820868.
- Sports Ground Irrigation Ltd have been appointed distributors for the Hunter range of sprinklers including the new Golf range, these complementing the user-friendly CIC 1 and CIC 4 controllers. SGI Ltd are also offering dealerships in some areas, together with full technical back-up and a design service. Tel: 0858 463153.
- Fairfield Turf have two new 'synthetic organic' fertilisers, claimed to be the only true demand feeds available in the UK. 'Lawn Builder' (22:3:3: + 1.6% Fe) is manufactured by a process called trionisation and utilises an expanded particle, impregnated both inside and out. With granules that are lightweight and small, incorporation into the sward is complete and is said to release all nutrients in a steady pattern over a growth period, thus avoiding surge. Made by the same process, 'Lawn Repair and Starter' is formulated to encourage regrowth of damaged turf and as a pre-turfing or seeding fertiliser. Tel: 06794 731.
- ICI Professional Products announce the addition of Kings Horticulture, Colchester, Essex to their network of specialist distributors. Commenting on this, ICI Professional Products National Sales Manager, David Siddon, said: "the appointment of Kings Horticulture will provide our customers in eastern England with an increased availability of products and a major improvement in customer contact and service." Tel: 0708 223300.
- The first ever HUXTRUK turf maintenance vehicle, designed and manufactured by Huxleys Grass Machinery of Alresford, Hants, has been purchased by Andover GC. This strong, modern vehicle, specifically designed with the British greenkeeper in mind, has a Perkins 23.5 hp water-cooled diesel engine, power steering and fully automatic hydraulic transmission. It takes the full range of Huxley turf care implements for aerating, spraying, brushing and load carrying. Tel: 0962 733222.

The Westurf Turfcare trade exhibition, organised by the South West and South Wales region of BIGGA, is looming up fast. The date for your diary is 29th April and the venue is Long Ashton Golf Club, Bristol. Gordon Child is the man to contact for more information – and to book your stand space. There's still some space available, but you'd better be guick. Give Gordon a call on 0803 844056.



All aboard the Huxtruk: from left, Eddie Fox, Chris Sturgess, Kevin Whatley, Mike Read, Alastair Fairweather and Tony Broad. Recognising the problems faced by coastal bodies, Grasslands Turf Farm have developed a turf specially designed to be tolerant of salty conditions. A Blend of creeping red and hard fescues, bent and smoothed stalk meadow grass, it is a fairly fine turf with reasonable wear characteristics. Each cultivar used has been selected for its ability to persist in situations where salt from sea spray would scorch and perhaps kill the grasses more usually found in fine turf. The turf has survived two years of salt tolerance testing at the Sea Front Hotel and Golf Course, Hythe, Kent, a place known for gale driven soaking sea spray. Tel: 0679 67130.

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Already many water authorities are warning of severe restriction in water usage this year following yet another long period of unusually light rainfall.

Agronomist Jim Arthur offers some sound advice on automatic irrigation and on using the 'human' computer to good effect

reenkeeping is the bane of technocrats' lives, because it G is not, and never can be, an exact science. It does not lend itself to being governed by arbitrary standards (shades of DIN numbers, for those who have ever had anything to do with building courses in Germany), partly because there are no universally accepted standards of perfection - they vary not only with the type of course, be it links or heathland, parkland or frankly meadow, but even between courses in each category. If standards are set they must be maintained and checked. How, for example, can you possibly set a standard of perfection for putting surfaces, which is not only an emotive assessment, depending on whether one's eye is 'in' or not, but which is so often affected even in the very short term by weather and other non-controllable factors. Stimpmeters have minimal credibility except to compare speeds of greens at a set time or the same green at different times. All too easily they can become a rod for greenkeepers' backs - with demands that they achieve greens of set speeds.

I have maintained for over 40 years that chemical (not physical) soil analyses mean nothing and are of no help to any reasonably efficient greenkeeper, whatever his age or experience. Why spend fortunes to accurately determine, say, phosphate levels to the umpteenth decimal place, when

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it has been known for nearly 90 years that we do not need anything other than bare minimal levels to support finer turf grasses. What do you do if you find you have phosphate levels well over 300 p.p.m. when you know you can grow the best fine turf grasses at levels far *below* 30 p.p.m.? The ideal



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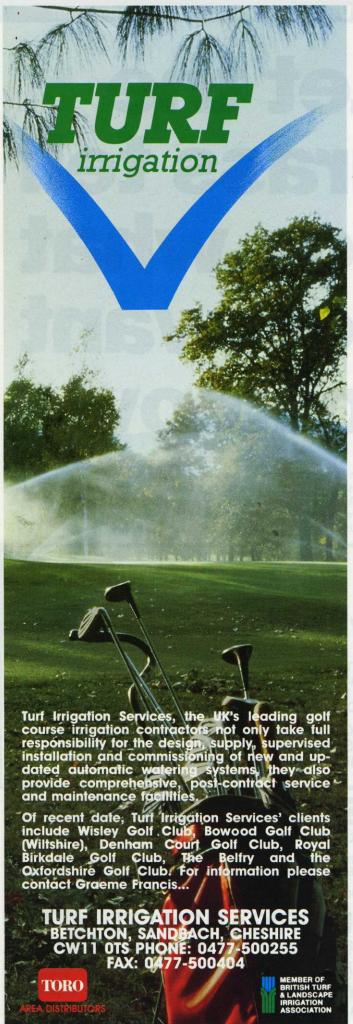
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'Overwatering is the cardinal sin of greenkeeping'

pH (level of soil acidity) is the one you have got!

It is by the same argument that erudite papers trying to set levels for golf course irrigation by using obscure and largely academic standards, based on data from agricultural sources, serve very little purpose. Even in the States, much of the abstruse calculations on how much water to apply relate to sand-only greens where there is effectively a 100% drainage rate, which eliminates one imponderable factor applicable in all other applications.

In the end, as such papers admit, the *decision* must be made by the man in charge ie. the head greenkeeper, who may be guided by some aids but who relies on the best of all computers – which lies between the ears of most of the species Homo sapiens! Moisture meters will never tell us how much to apply, but they can be very useful in giving a relative (ie. comparative) measure of soil moisture content at varying levels with a more representative sample of checking profiles when changing holes. It is no good waiting until the 'shine' on fine turf indicates severe stressing due to heat and drought. By then it is too late; but if it has occurred then we must break the rules and water heavily and aerate deeply to restore the root zone moisture.

There can be little fundamental disagreement with various statements on irrigation, such as:-

- start late in the season, as cold wet greens start growth much less quickly when the weather improves than dry ones. Late means May rather than April, which is a winter month in the UK.
- finish as early as possible to go into winter with dry greens, even if this means accepting the problem of a late drought!
- the main problems in the UK and Europe are of poor drainage and over-watering, not of drought.
- the soil moisture level must be maintained as uniformly as possible. Soaking surface soils with bone dry conditions below is asking for *Poa annua* and thatch to take over. In other words, never let greens dry out completely, but never saturate them. Again easier said than done, but intensive *deep* aeration helps.
- "Overwatering is the cardinal sin of greenkeeping" (Al Radko's immortal words!)
- · water should never be used to make greens soft and holding.
- water is simply used to keep grass alive, not to make it green or even to make it grow.

What would be far more useful than trying to work out the theoretical calculations based on general (and therefore non-specific to each individual course and thus relatively useless) criteria – which frankly are not understood or believed by the majority (including me!) and cannot easily be measured – would be to agree methods of getting the best out of pop-ups.

One of the worst heresies to emerge from a northern seat of 'learning' a decade ago was their advice to thoroughly soak greens (with pop-ups) once a week and then let them dry out before watering again. This most emphatically is not only wrong but demonstrably impractical. Suppose a normal irrigation time in drought is 10 minutes per green nightly. To apply this quantity once a week means 70 minutes per green – or for 19 greens an irrigation cycle of 11 hours – and this is not counting the tees and approaches. Clearly the problem would be when to find time to let the members play. So these bright lads suggested watering six greens one night, six greens two nights later, and the last six at the end of the week. How does one play a course with six rock-hard greens, six soggy bogs and six in between? All this is a relic from the days of hose and sprinkler watering in day-time, not principles but expediency.

Not only is such a system impractical, but this is the best way I know of losing the capillary connection between deep root zones and the surface – and then it is the devil's own job to restore it, even with the aid of wetting agents. Any practical horticulturist let alone greenkeeper will know that frequent light showers at night are better for plants than infrequent torrential thunderstorms or cloud-bursts.

Of course, there can be no arbitrary rule covering all eventualities, but the general principle is that with pop-ups one waters to the minimum level needed by the *wetter* areas – say up to 2,000 litres per 600 square meter green (perhaps a different duration for different greens, shaded or exposed to the wind, as the case may be) *every* night in drought. This, I accept, leaves dry areas too dry, so what can we do?

'It is well to remember that water is not only predictably going to be scarce, it is also going to be much more expensive'

If the dry areas are dry because they are missed by the pop-ups in a poorly designed old system, then increased irrigation time will only make the rest of the green too wet while the dry areas stay dry. Clearly the answer must be to hand water with an open hose, especially on raised areas, with penetration aided by using wetting agents if need be and backed by intensive aeration. The best designed pop-up system at it most efficient can only apply water uniformly - and yet we do not want uniform coverage on featured greens, with different areas having different demands. Hopefully, we shall no longer hear members criticising head men for hand watering "when we have spent so much money in giving him an automatic

Clearly, daily inspection is needed to check coverage - even of malfunctioning heads, but more usually wind-effect and run off on slopes. Moisture meters can confirm what the eye suspects, but none will tell you how much to apply. "If in doubt, don't" is still a very good rule. We should perhaps take our cue from weather forecasters, now being urged not to bemoan rainfall. We must learnt not to be frightened of drought - remembering that with skilled, experienced greenkeeping and a strong nerve, it can be used to get rid of a deal of rubbish!

Sadly, while bent and especially fescue will never be killed by drought alone, there is very little margin between checking and killing Poa annua and beginners have often been over-enthusiastic in their crusade against Poa annua, ending up with crisp dead grass and suffering accordingly.

Finally, it is well to remember that water is not only predictably going to be scarce but it is also going to be much more expensive. Claimants who insist that only the installation of fairway watering can give a better (and better quality) cover on thin fairways on sandy soils fail to understand that we play golf on turf not colour, and our native grasses bleach but never die in even severe droughts, though I accept that today's intensive traffic may put it under severe stress. Fairway watering over-generously used can severely cut back on the run of the ball, which matters more here where we play golf on the ground, compared with the States where it is played largely in the air.

The answer is to aerate intensively and to top-dress generously with humus-rich, moisture retaining materials such as fen peat, a policy used for 25 years on all the championship links with great suc-

If there is insufficient water - or, worst still, a ban on its use is imposed - then turf which has adapted to a high watering routine will suffer severely. Impounding over the winter sounds an ideal way and is blessed by the National Rivers Authority, but if such impounding lakes double as water features in play, then as they are

exhausted the effect of playing over a muddy, weed infested hollow is not brilliant. If we concentrate on greens and tees and especially independently on approaches, we can forget fairways in almost every

All in all, irrigation is not capable of being controlled by the book and there is no substitute for an experienced eye to suggest how much and when to irrigate. Skilled water management is the key factor in greenkeeping. Anticipation, as in all greenkeeping, is the secret and this can only come with experience. In its absence, it is better to under-water than over-water, but the grass will tell you what you want to know if you only have eyes to see.

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Designed to continuously monitor local weather conditions, the Aquaflow weather station logs temperature, barometric pressure, solar radiation, rainfall, relative humidity, wind speed and direction.

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Allowing for site factors, the controller digests the information provided and automatically adjusts the watering program to provide only the amount of water necessary to meet ET requirements.

By exercising this time degree of control, the weather station relieves greenkeepers of the chore of constantly having to update run times to keep pace with the vagaries of the weather.

Field tests, carried out last year, have surpassed expectations, says Parker.

"Not only does it allow greenkeepers a greater

flexibility, it overcomes vague, rule-of-thumb calculations. Results have shown that the weather station is capable of a seasonal water saving to the order of 15-30%."

In addition to saving water (and reducing water costs), the weather station helps lower pump station power consumption – and charges. This is also reflected by reduced operational wear and tear to the whole of the irrigation system and therefore, maintenance.

"If only for environmental considerations, I believe the users of irrigation systems have an obligation to safeguard against wasting water-especially on golf courses," says Parker. "The weather station provides a positive means of conserving water."

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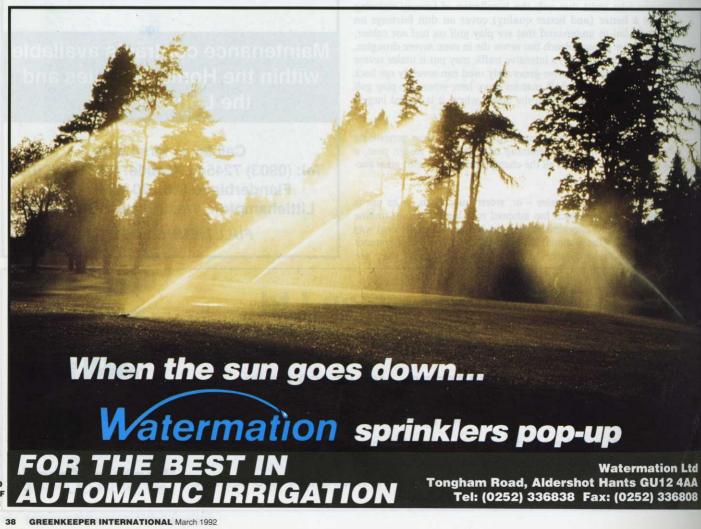
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Dickensian treatment for the man who asked for more

■ One particularly spiteful piece of vindictive skullduggery has been reported, that of a head greenkeeper of several years standing being demoted (in title) for no other reason than the little Caesars operating at his particular course want no truck with recommended pay scales. "Hitherto you will be known as 'groundsman' for the course" was their retort to his polite request that BIGGA pay scales be considered as a basis for any future pay negotiations. The poor man, poor in a literal sense, is paid the miserly sum of £8,800 per annum.

Watch the fumes Jason. they re quite strong.

■ The inaugural meeting of the Association of European Professional Golf Designers was held in February, brought into being by their collective frustration for recognition, coupled with their inability to become members of the longestablished British Institute of Golf Course Architects, which does not accept professional golfers. With some 40odd professionals now

involved in course construction they may well have a point, though as ex-Ryder Cup player turned designer, David Thomas, pointed out, some players' names carry more weight with developers than expertise. Without added comment, I am reminded of the words of the undisputed greatest player of all time, Robert Tyre (Bobbie) Jones, who wrote of his association at Augusta National with Alister Mackenzie: "I think Mackenzie and I managed to work as a completely sympathetic team. Of course, there was never any question that he was the architect and I his advisor or consultant. No man learns to design a golf course simply by playing golf, no matter how well."

■ It was good to see Tom O'Brien looking decidedly perky at the recent BTME and to learn that through his having received so much support from his peers over the Royal Birkdale post-mortem into the condition of the greens at The Open, he has agreed to remain with the Club until his scheduled retirement in two years.

■If there was an award for catchy captions, Paul Worster, head greenkeeper, Lillybrook Golf Club, would be collecting the glittering prize. His nifty throwaway line: If you know manage turf in the west, you can manage Westurf says more to me than reams of promotional bumph. Like the wise section secretary for the South West that he is, Paul knows that Bristol is a good place to be on April 29th – how about you?

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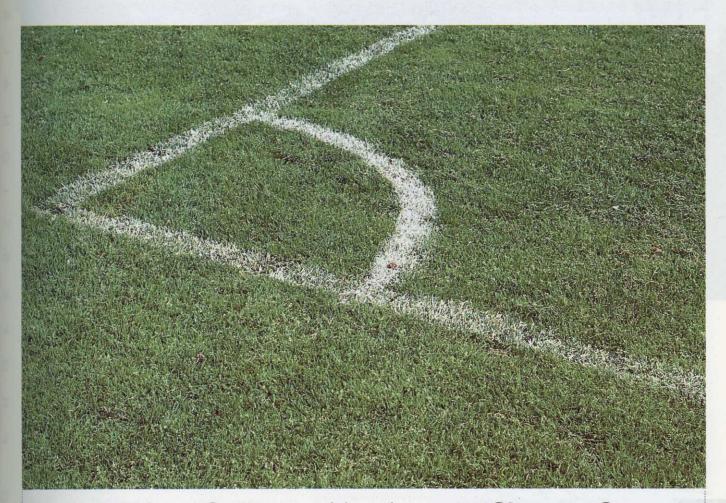
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Beaver TM708. The legendary 7-gang hydraulic mower has a huge 16ft cut to mow fairways in championship time. Fully floating 8" or fixed 10" cylinder heads, with a choice of blade configurations and rollers, follow the fairway contours to leave a superb finish.



WOODS

Where the fairways stop, the Beaver T12 starts. With its 74" cut, hydrostatic transmission, low centre of gravity and 7" cylinders with 4 or 7 blade option, it's ideal for mowing around tees, surrounds, bunkers and fences.



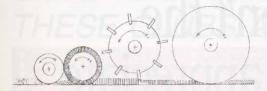
REF 90 HAYTERS PLC, SPELLBROOK BISHOP'S STORTFORD, HERTS. CM23 4BU TEL: BISHOP'S STORTFORD (0279) 723444 When spring thoughts turn to buying a new mower, what are the latest features and who are the companies supplying them? GLY BRYAN takes a look around

here was a time when the term motor mower meant a powered machine with a front roller, cylinder and rear roller and the only option was whether it came with a (trailed) seat. Nowadays there is a choice of dedicated or multi-purpose power units; mechanical or hydrostatic drives; belts chains or gears and so on.

With so many machines to choose from, it is vital to assess exact requirements before approaching suppliers - otherwise the latest 'gizmo' can easily avert you from your original objectives. Purchasers need to take into account not simply(!) maintaining the grass, but all aspects of labour and machinery needs and resources.

Based at Didcot, Oxfordshire, Allen Power Equipment Ltd offer three ride-on triple cylinder mowers, all featuring beltdriven six-blade reels. Cutting widths are 1.5m (60in), 1.68m (68in) and 2.1m (84in). Brand new at Peterborough, their Allen Mustang, a new 42in ride-on All Terrain mower powered by a Briggs and Stratton Twin Vanguard engine caught many eyes, especially the cutting deck with contra rotating blades and the hydrostatic transmission system with single foot pedal control. The height of cut is electrically powered and can be set at 3/4in to 4in at the touch of a button. The mid-range 1.68m National machine is available with either petrol or diesel engines. Prices start at £3,400.

For 1992, Allett Mowers Ltd from Corby, Northants, is looking to increase its share of the golf market with two new pedestrian cylinder mowers. The Supershaver II is an improved version of the 3.5 hp Supershaver, whilst the Tournament machine differs from other greens mowers by having a power driven spiral nylon brush fitted between the front roller and cutters. This cleans the front roller and lifts up all the grasses to a vertical position, enabling the cutters to cut to a precise, predetermined height. The gentle grooming action takes place automatically each time the green is cut.



Atco's B17 weighs a modest 58kgs (124 lbs) compared with the WWII American bomber's 14.6 tonnes. The Stowmarket company offers two professional cylinder mowers in its Club range, the 10 blade B17 with a 43cm (17in) cut and the 12 blade B20 Deluxe with a 51cm (20in) cut. Prices start at £868.09

Evesham-based Bomford Turner is developing its range of cylinder machines under the Turner name. The company's new Rider mower uses a 75cm (30in) four blade cylinder unit, but this can be quickly replaced with a rotary or flail head if required. Available in manual or hydrostatic versions, prices start at £3685.

Hayter Beaver's offerings for 1992 include the Bunton (22in) greensmower, displayed at this year's BTME show. It has a 3.5hp Robin petrol engine, nine blade cylinder and cutting height adjustment of 3 to 40mm. Options include a turf groomer or rotary brush, grooved or smooth front rollers and a thatching attachment. A standard feature is two quick-release pneumatic transport wheels.

Honda's Power Equipment division in Chiswick, West London offers a comprehensive range of pedestrian and ride-on mowers, most of which have rotary decks. It also offers three pedestrian cylinder mowers with cutting widths of 40cm, 50cm and 65cm (16in, 20in and 26in). These are chain-drive machines, each fitted with a six blade cutting reel.

In contrast to the size and diversity of the Honda empire comes the family firm of Huxleys in New Alresford, Hampshire. Its 358 greensmower has a 17.5hp diesel engine powering a





FACTS

hydrostatic transmission and hydraulic drive to the three cutting cylinders. Cutting width is 1.47m (58in) and cutting height is adjustable from 4mm to 13mm. For compact tractors there is the mounted triple reel gang mower or the trailed five reel unit. Both have hydrostatic drive and offer cutting widths of 2.13m and 2.22m (84in and 87.5in) respectively.

Jacobsen at Kettering, Northants, has augmented it's range of pedestrian and ride-on machines with the addition of the ST-5111 model. This huge five reel machine has a cutting width of 3.4m (llft 2in) when all five units are in use. It can also use either three or four reels to give cutting widths of 2.08m or 2.74m (82in or l08in). The cylinders can be replaced with a flail mower, brush or even snow thrower.

Further north at Langar, Nottingham, John Deere's Grounds Care division has built up an impressive range of equipment since it first arrived in the UK. The company currently offers pedestrian, ride-on and gang mowers, but will also supply its 755 or 855 compact tractors as triple reel mowers. Known as 756/856, their hydraulically driven mowers can be removed, allowing the tractors to be used conventionally.

Lloyds and Co of Letchworth says its long-standing policy of refurbishing old machines has provided a valuable fund of experience for development of new equipment. For 1992 the company has fitted a new design of front roller to its Paladin pedestrian machines which it claims will provide minute adjustment for achieving a uniform height of cut. 52cm (21in) Pal
GREENKEEPER INTERNATIONAL March 1992 43

• Pictured, top: **Toro's Greenmaster** 3100 has an audible oil leak warning: and John Deere shows how to turn a compact tractor into a turf mower





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NOTHING RUNS LIKE A DEERE

adins will also be available with a new vertical rake attachment.

A useful feature on the 55cm (22in) pedestrian greens mowers from Saxon Industries at Hungerford, Berkshire, must be their drum brakes. The mowers - one with, and one without groomer - have de-mountable transport wheels for moving between greens and staff can 'drive' them at up to 7mph, says the company. Belts and chains have been dispensed with in favour of gear drives and the 9 blade cylinder has a cutting height adjustment from 3mm to 13mm. The company also offers a 9hp triple reel ride-on.

Ransomes offers an extensive range of machines from pedestrian units to ride-ons and gangs. Three of its ride-on models, the GT Champion, GT Classic and Fairway 5000, are exclusively for green and fairway use. The GT Champion has a diesel engine and is available with Verti-Groom, Verticut or Tee cutting units. In standard rig with 3 Verti-Groom units it has a retail price of £16,275.

Another company with a full range of equipment is Lely (UK) Ltd from St Neots, Cambridgeshire, marketing TORO machines. The company claims a unique feature of its triplex Greensmaster 3100 is the hydraulic oil leak detector which sounds an alarm, alerting operators to move off the green. Other features include an engine mounting system, said to make it one of the quietest machines available.

Turner World Mowers of Kings Coughton, Warwickshire is a new company, but its range of machines already includes five models of triple reel ride-on mowers, each with a choice of cylinders. At the top of the range is the diesel-engined 390 which has a cutting width of 2.47m (8ft 4in).

Brouwer equipment is marketed in the UK by Turfland Professional Ltd, based in Dutton, Cheshire. The range of trailed mowers includes five and seven-gang fairway mowers offering cutting widths of up to 4.8m (16ft. Gangs are raised hydraulically, while drive to the cylinders is mechanical, operating from the pto of the tractor unit.

GRASS FACTS N SPATE IN OUT a perfect cut

wide variety of factors are important in the design of a reel type grass mower, and they may cause the resulting machine to perform well or poorly depending upon how they are combined in the final machine. Some of the important factors include: the height of cut range in which the machine will be used. what type of terrain will be encountered, clip length, reel diameter, reel construction, reel helix, bedknife/bedbar design, the cutting unit suspension system, the clippings discharge or collection requirements, and the method of adjusting the reel to bedknife contact or clearance. While all of these are important factors, only the method of adjusting the reel to bedknife contact or clearance and the resulting implications will be discussed

Reel and bedknife adjustment methods

There are two concepts of adjustment method. One concept is to adjust the reel down toward the bedknife (moveable reel). The other concept is to adjust the bedknife up to the reel (moveable bedknife). There are, of course, variations in methods of doing each of these concepts, such as whether there is one adjusting knob or several adjusting bolts.

Each of the methods can be made to work well, and each has a number of potential advantages and disadvantages, depending upon the execution and the final requirements for a given machine. These will be discussed in order that the reader may have a better understanding of reel type mowing machines.

Moveable reel

This method provides a fixed bedknife/bedbar assembly which is rigidly attached to the cutting unit frame. The reel assembly is then adjusted down within the cutting unit frame. Potential advantages include:

1. a rigid cutting unit frame assembly, since the bedbar can be a torsional structural member,

2. a consistent angle of the bedknife to the turf as the reel and bedknife wear.

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In search of a perfect cut

'For some applications of reel mowers, the change of height of cut during the life of one bedknife is not significant'

since the bedbar does not rotate,

 a relatively simple adjustment of differing amounts from end to end if the wear is uneven for some reason, since each end is adjusted independently.

Potential disadvantages include:

 a heavy and possibly cumbersome adjustment mechanism since the entire reel and reel drive assembly must be moved,

2. a locking mechanism required to hold the reel in place after adjustment

3. changes in height of cut as the bedknife wears.

Moveable bedknife

This method provides a fixed reel assembly within the cutting unit frame and a bedknife/bedbar assembly which is held in the cutting unit frame and pivoted at the ends by some means to adjust the contact or clearance.

Potential advantages include:

1.a simpler cutting unit frame system, since the reel and reel drive system do not move in the cutting unit frame.

2. a simpler adjustment method, since the adjustment can be done with one knob and no tools if desired

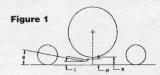
Potential disadvantages include:

 a likely slight change in bedknife angle to the ground as the bedknife and reel wear, unless an adjustment is provided.

The old height of cut change debate

For years, people have debated which of the systems was better from the stand-point of change in height of cut of the machine as the reel and bedknife wear. After all, the reason for adjusting the reel or bedknife is to compensate for the wear of the cutting surfaces during

If these did not wear, a perfectly set up machine would stay that way forever. But they do wear, and generally the bedknife wears 5 to 10 times as quickly as the reel. Because the bedknife wears faster, the method of adjustment has the possibility of changing the height of cut as the parts wear. Consider the cutting unit cross section in figure 1. For a moveable reel concept, the bottom surface of the bedknife is fixed with respect to the ground, and distance "C" does not change as the reel is adjusted to the bedknife. This means that as the bedknife wears, the height of cut "H" is reduced as the reel is adjusted down toward the bedknife which is wearing away. The height of cut will change by an amount equal to the wear thickness of the bedknife. For a greensmower, this height of cut change will be very significant, perhaps changing from 0.187" to 0.125" as the bedknife wears.



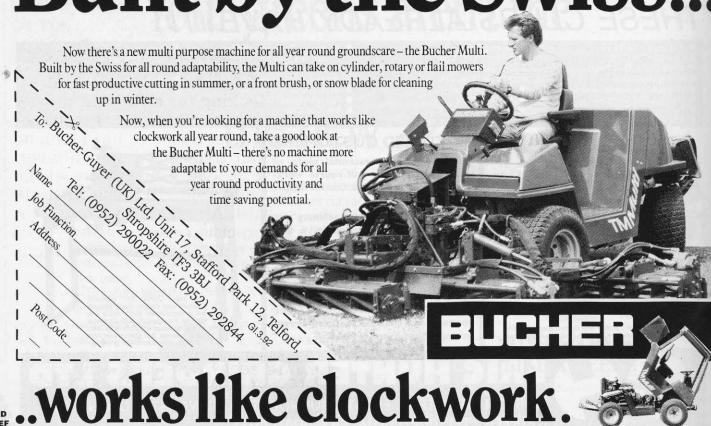
For a moveable bedknife concept, the reel distance to the ground (distance 'R' in figure 1) is fixed, and does not change as the bedknife wears and is adjusted up toward the reel. This means that as the bedknife and reel wear, the height of cut is actually raised by the amount of reel wear. However, the reel wear is about 5 to 10 times less than the bedknife wear. For the above example, the bedknife wear life is about .062", and during that time the reel would wear about .006" to .012", so for almost all circumstances the change in height of cut is insignificant during the life of one bedknife. On a machine which has several cutting units, changing only one bedknife (not all of them) will result in a mismatch cut due to the wear of the reel and bedknife. This mismatch cut will be much worse on the moveable reel concept, due to the lip height of the bedknife having such a great effect on the height of cut. This is why manufacturers recommend changing all bedknives in a set.

For some applications of reel mowers, the change of height of cut during the life of one bedknife is not significant. However, for low heights of cut such as on the green, the change of height of cut caused by normal bedknife wear with the movable reel concept would be a significant problem. For this reason, all successful greensmowers are of the moveable bedknife design, as are virtually all cutting units designed for low heights of cut.

Bedknife angle to the ground

Because the bedbar/bedknife is rotated to adjust the contact/clearance on the moveable bedknife concept, the angle of the bedknife to the ground ('B' on figure 1) changes gradually as the bedknife wears

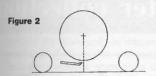
Built by the Swiss...



It is possible to produce the moveable bedknife concept in a way as to require one adjustment knob'

(and even more gradually as the reel wears). While this angle does not have a precise correct value, under some conditions, this change in bedknife angle may have some adverse effect upon the performance of the mower. Of course, the movable reel concept does not adjust the bedknife angle as the reel and bedknife wear, but on almost all cutting units (regardless of adjustment concept) the bedknife angle changes as the height of cut is changed.

So the angle of the bedknife is dependent upon the height of cut adjustment method as well as the contact/clearance adjustment method. For this reason, many cutting units allow adjustment of both front and rear rollers to adjust the bedknife angle to the optimal range.



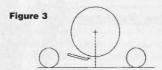
Location of bedknife cutting edge

The location of the cutting edge of the bedknife is important in determining how well the cutting unit will cut. The method of adjusting height of cut may cause the bedknife to move forward or rearward as the height is changed, and moving the bedknife rearward as the height of cut is increased will result in better cutting than moving the bedknife forward as the height of cut is increased. If the cutting unit in figure I is adjusted by moving only the front roller, the bedknife cutting edge will move forward as the height of cut increases as shown in figure 2.

If the cutting unit is adjusted by moving the rear roller, the bedknife will move rearward as the height of cut is increased as shown in figure 3. Because of this, cutting units which are designed to cut over a wide range of heights must have some method of adjusting the rear roller location to allow the bedknife to move somewhat rearward as the height of cut increases.

The mechanism required to allow adjustment of the reel and bedknife contact or clearance is somewhat different between the two concepts. There are advantages and disadvantages to both concepts.

In the moveable reel concept, the entire reel and its drive mechanism must be moved. In most cutting units with this concept, the reel must be locked in place after adjustment to ensure that the adjustment does not move during use. Also, adjustment is done at each end of the reel independently. Thus, the mechanic must check the adjustment at each end to ensure that it is correct at each end.



In the moveable bedknife concept, the bedknife/bedbar assembly must be rotated and/or twisted to create the desired adjustment. Many cutting units of this concept are built with the adjustment at each end so that each end is adjusted independently, similar to the moveable reel in this way. However, it is possible to produce the moveable bedknife concept in such a way as to only require one adjustment knob to adjust the clearance of the entire cutting surface, speeding the adjustment process. In order for the single point adjustment method to work, there must be some method to align the bedknife to the reel to allow for manufacturing tolerances in these parts and create the same clearance between the reel and bedknife at each end. This is done by adjusting one of the pivots of the bedbar up or down via an eccentric or moveable pillowblock. The mechanic adjusts for this tolerance once at set-up of the cutting unit, and then only needs to use the single knob to adjust the reel and bedknife contact or clearance.

The moveable reel concept generally requires more structure in order to move the reel and its drive system, while still being able to lock the reel securely in place after adjustment. This heavier structure requires a more rigid cutting unit frame in order to hold the reel securely in place. So while the moveable reel concept allows a more rigid cutting unit frame (because the bedbar may be a torsional structural member). that concept requires a more rigid frame to work successfully. The adjustment system for the moveable knife is generally lighter in weight (while still strong) and often much simpler while still securely holding the parts in place.

Cutting units have been produced for years with both single point adjustment method and individual end adjustment methods and each has advantages and disadvantages. The traditional method was to use individual end adjustment. This method allows the precise adjustment of each end of the cutting unit virtually independent of the other end. This seems good, in that if one end wears more than the other, this can be compensated. However, it requires two adjustments for each cutting unit each time it is adjusted. This is difficult, and unless the person doing the adjusting is very experienced, it is very difficult to tell

ALLETT **MOWERS LTD**



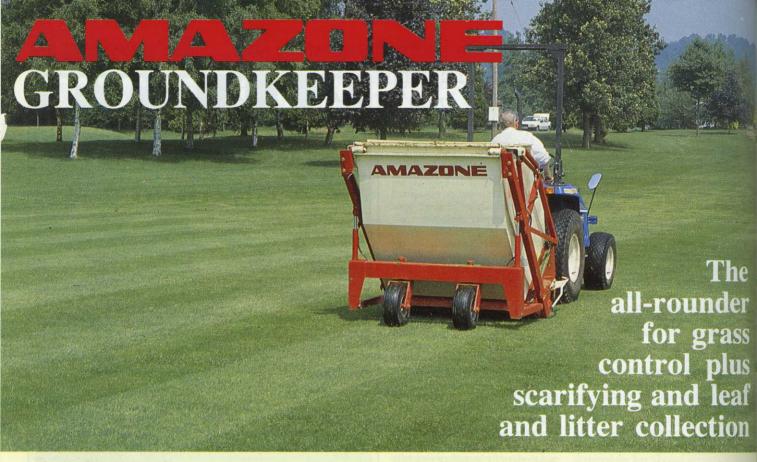
A CLOSE SHAVE

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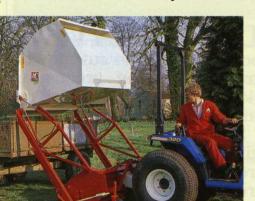


Amazone Groundkeeper flail grass cutting machines are available in standard and hi tip linkage mounted ranges with working widths of 1.20, 1.35, 1.50 and 1.80 metres. They will cope with grass of any height to leave a clean 'lawn' finish.

Features include generous hopper capacity, quick change reversible flails, easy height adjustment, slip clutch drive train protection, rugged construction, superb service back up.

A special spring-loaded top link enables the machines to follow ground contours.

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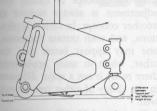
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'It is possible to adjust virtually any cutting unit in such a way that frequent backlapping is required to get a good quality of cut'

In search of a perfect cut

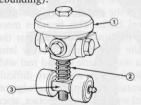
which end needs adjusting unless paper is used as a measuring shim (ie. does it cut or pinch paper?). It has been found that on some machines where some of the adjustments are difficult to reach, the machines are not adjusted properly, but often too tight on one end and too loose on the other (hard to reach) end.



Cutting Unit with single point adjustment.

In an attempt to make adjustment easier, the single point adjustment method was invented. In this concept, one knob moves the entire bedknife toward or away from the reel. The single knob makes the adjustment much easier, since only one adjustment is done for a cutting unit, and in addition, the knob has detents to allow the person doing the adjustment to know how much

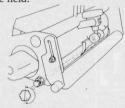
the adjustment has been changed on each machine. However, since the entire bedknife moves when the knob is turned, some other system must be included to allow the bedknife to be levelled to the reel to take up the tolerances which are inherent in grinding the bedknife and reel (whether new or when rebuilding).



Single point adjustment mechanism. 1: bedknife adjusting knob, 2: compression spring, 3: pivot bar

This levelling system is an eccentric bolt or a moveable pillowblock type of arrangement. Experience has shown that once a cutting unit is set up correctly, the bedknife wears at the same rate along the whole length, which means that the adjustment can be completed by only turning the adjustment knob, without having to re-level. On cutting units without the single point

adjustment, uneven wear occurs when the two ends are not adjusted equally. This is most pronounced where one end is difficult to reach, and is often not properly adjusted. When uneven wear occurs, the rear roller should be readjusted periodically to be level to the cutting surface of the bedknife to avoid mismatch or differences in height of cut. (Cutting units without an adjustable rear roller will be unable to be set up correctly in this regard.) Field experience has shown that both methods may be used successfully in mower design and construction, when properly executed, and that both methods are successful in the field



Eccentric bolt to take up tolerances after grinding

To backlap or not to backlap

Sometimes salesmen have presented one type of adjustment as

TELEPHONE

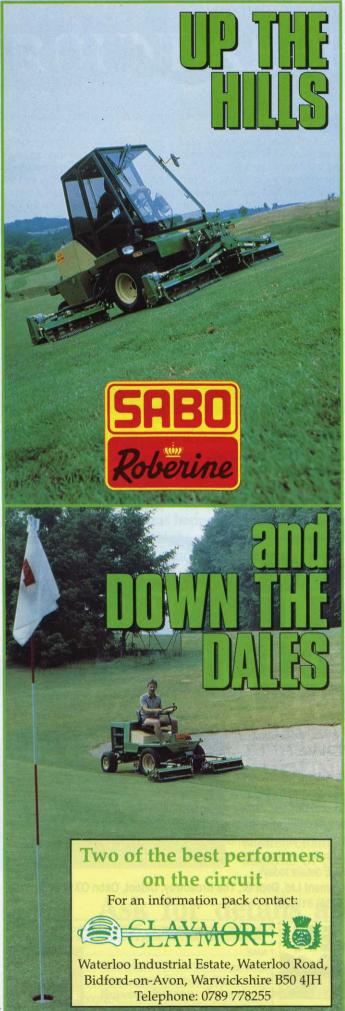
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better or worse than the other in regard to the necessity or ease of backlapping. While this may make a good sales position, it is not necessarily true. In fact, it is possible to adjust virtually any cutting unit in a way that backlapping is totally avoided during the life of one bedknife. It is also possible to adjust any cutting unit in such a way that frequent backlapping is required to get a good quality of cut. Experience has shown that it is quite easy to adjust a single point cutting unit at the proper rate to yield a good quality of cut while not requiring any backlapping for the entire wear life of a bedknife.

The need to backlap often has nothing to do with the cutting unit design, but rather with the method of grinding the reel and bedknife cutting surfaces. When the reel is single blade ground, the heights of the blades are not exactly equal after grinding (due to stone wear from the first to last blade). If the bedknife is not ground carefully it can warp, resulting in a nonstraight cutting surface after grinding. In these cases, it would be necessary to backlap to establish an acceptable fit between the reel



POSTCODE



In search of a perfect cut

and bedknife. If the reel were cylindrically ground, and the bedknife ground carefully, the resulting fits would be acceptable without backlapping.

This does not mean that cylindrical grinding is to be preferred in all cases. With cylindrical grinding it is completely impossible to put a backgrind on the reel. The resulting land width of the reel is the full width of the reel blade. This requires more power to turn the reel against the bedknife than does a narrow land from a single blade ground reel with a backgrind. It is also more difficult to maintain a sharp cutting edge on the reel with full width contact, since more material must be worn away to keep the edge sharp. Because of this, it is more likely that a cylindrically ground reel would require backlapping at some point between grindings than a reel which has backgrind. So there is a place for both types of grinding, but the method will influence the backlap requirements.

Conclusions

There are many factors involved in cutting unit design, and it is not accurate to make a blanket statement that one concept of cutting unit adjustment is always superior to another concept. In certain applications, and with certain executions, one may appear better than the other, while in many applications there really is not a major difference in the ability of either type to work well.

 The author, Fred Wucherpfennig,
 P.E. is senior principal engineer for the Toro Company.

Disgusting manners of a lesser spotted flatworm

t will be better if you are not reading this over breakfast, for this is the tale of a wee beasty with disgusting table manners. I refer to the nastiest of imports from New Zealand, the Artioposthia triangulata, or flatworm, which is now reported to have made itself at home in Scotland and appears set for border reivers.

This little wriggler has the habit of oozing up to its new found playmate: the ordinary native garden earthworm, hugging it and discharging a secretion which gives off a paralysing toxin. Suitably subdued and no doubt expecting romance, the poor old earthworm is then turned to the consistency of soup through the exuded digestive juices of Mr Flat and is slurped up like a can of tomato juice.

The flatworm can grow up to six or seven inches and can liquidise its prey in less than an hour. Whilst it demonstrates a penchant for earthworms, it is no glutton and is reported to survive for months at a time with nothing save the lingering flavour!

The implications of flatworm to the greenkeeping profession are as yet minimal, though scientists fear that its spread could ravage the earthworm population, with resultant harm to wildlife and agriculture.

First identified in Scotland and Northern Ireland around 1965, the mucus-covered flatworm was in all probability introduced through earth clods on plant imports from New Zealand. Major sightings have been made in garden centres, domestic gardens and some Scottish National Trust properties.

If there is a ray of hope for the English, it is that scientists believe much of England may be too warm and dry for the flatworm, though they express themselves mystified as to why it should not survive in wetter westerly parts. To quote a Manchester University flatworm expert, "It's a matter of luck that we don't have it here yet, and I would imagine it is only a matter of time." One other bright spot is that earthworms do not necessarily disappear after the flatworms begin their banqueting. With over a dozen different species of earthworm in Britain, some seem better able to escape than others.

Just how much damage can the flatworm do to earthworm populations? As a measure (according to scientists in Northern Ireland) in just one field on the outskirts of Belfast, flatworms have slurped their way through almost the complete earthworm community.

This invader is a real threat and must be taken seriously, for as yet there is no known method for control. Any reader spotting a flatworm (as you might expect, flattish though sometimes changeable in shape, brown uppermost with a pale underbelly and usually found on damp soil), either in Scotland or on the English borders, should advise the Biological Recording in Scotland Campaign on 031 312 7765.

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GREEN

Keeping in touch with news and comment from the regions

■ Pictured at the recent GCSAA Conference and Show in New Orleans are GCSAA outgoing President, Steve Cadenelli and BIGGA Chairman, George Malcolm. Neil Thomas reports that: "BIGGA's booth at the Exhibition was exceptionally busy with much interest in membership, magazine subscriptions and exhibiting at the 1993 BTME. Relationships with the GCSAA were further strengthened and productive discussions were held with both Steve Cadenelli and the GCSAA's Executive Director, John Schilling. The event proved to be an excellent marketing and public relations exercise for the Association."



COMING UP

March 11th: British Institute of Golf Course Architects Seminar, 'The Positive Face of Golf Development', Institute of Engineers, London.

March 24th-26th: RECMAN (Sports Council) Conference and Exhibition – National Exhibition Centre, Birmingham.

March 26th-29th: Golf Asia '92 – World Trade Centre, Singapore.

March 27th-29th: BIGGA National Education Conference – Royal Agricultural College, Cirencester.

April 8th: BIGGA Annual General Meeting, Royal York Hotel (immediately adjacent to York Railway Station), York. Commencing at 2.30pm.

April 23rd-26th: The World of Golf, Olympia, London.

April 29th: BIGGA South West and Wales Region Trade Show WESTURF '92 – Long Ashton GC, Bristol.

June 3rd-4th: Landscape Industries '92. Trade Show – National Agricultural Centre, Stoneleigh, Warwickshire.

July 16th-19th: The Open Championship – Muirfield, Scotland.

August 10th-12th: BIGGA National Golf Tournament – Littlestone GC, Kent.

September 8th-10th: IOG Trade Exhibition – Peterborough, Northants.

September 24th: ISEKI Championships Final – Coventry GC, Warwickshire.

• Will section reporters please note that final copy date for inclusion of Around The Green material in the May issue is April 1st.

NORTHERN

I hope everyone enjoyed the show at Harrogate, where it was good to see so many Northern section members present. Special thanks to those who gave up their time to man the doors and perform special duties.

With spring quickly approaching, now is the time to tell you of the golf events planned for 1992: SPRING TOURNAMENT over 27 holes, Wed. 15th April at Kirkbymoorside GC (Iseki Qualifier). PRESIDENTS DAY Wed. 3rd June at Bradford GC. INVITATION DAY, Wed. Aug 19th at Northcliffe GC (Shipley) n.b. guests must be officials from your Club. AUTUMN TOURNAMENT Wed. 30th Sept at Scarborough (South Cliff) GC.

The Roses Match for '92 will be in Lancashire and details will follow when available. Please note that all bookings must be accompanied by a 10% deposit and that entries close one week before the event. Most venues have a 40 limit so early booking is advised to avoid disappointment. Unfortunately the proposed trip to Lloyds of Letchworth has been cancelled due to lack of interest.

The Annual Dinner Dance will take place at Tinos Restaurant/ Wharfedale Public House, Arthington, Otley on Friday 3rd April, commencing at 8.00 pm. Tickets are £15.00 and the event is open to members and guests. Please call 0274 590463 for reservations.

BOB LUPTON

SURREY

The winter lecture held recently proved to be a huge success, with over fifty members present. A superb presentation on chainsaw safety was given by Brian Mills and Alistair Scott from Brinsbury College. Thanks were extended to them, along with gratitude to the Walton Heath Artisans Club for the use of their clubhouse and to Ted (James) Bond for manning the bar!

Congratulations are due to David Whitaker of Wisley GC on his election as Greenkeeper of the Year and a warm welcome is extended to new member, Gary Martin of Ashford Manor.

Our Spring meeting will be held on Thursday April 23rd at Foxhills GC. Entries are limited so please apply promptly.

ROGER TYDEMAN

BUCKS, BERKS AND OXON

Thanks to all who attended our first winter lecture at Sonning GC., featuring what may have been a long-winded and boring subject - COSHH - but which actually turned out to be one of the finest lectures I have ever attended. Those who were present now realise just how important the subject is and our sincere thanks go to Jon Allbutt for his excellent presentation, along with gratitude to Alan Collis and Sonning GC for the smooth running of the event. Whilst on the subject of lectures, do not forget the third lecture in the series: Conservation on the Golf Course, again at Sonning GC on March 17th. The speaker is from the National Conservation Council and the topic is indeed most topical -so I hope to see you all there!

Not too many reminders this month (I can visualise the sighs of relief!) but a prompting that we will be looking for entries for the Rigby Taylor Fourball Trophy soon, so sort out a good partner before they all get snapped up and keep watching this column for details. That wraps it up for this month, but I hope to see you all at Sonning.

RAY CLARK

MID ANGLIA

The BTME at Harrogate goes from strength to strength and congratulations must go to all concerned. It was particularly good to see our section so well represented, with many members supporting the event. The section has been relatively quiet since Christmas, though we have had one lecture – being entertained by Chris Brook who talked of his experiences in bringing a new golf course into play from seed. It was an extremely interesting talk (even though there wasn't a projector!). Well done, Chris. Elsewhere in 'Faces & Places' you'll see the news of Andrew and Ann Kennett's new addition (Elizabeth Helen) and I'm sure you'll join with me in wishing them lots of happiness together.

Finally, you should have all received your entry forms for forthcoming competitions. Chris Brook would be very grateful if you send the appropriate form and entry fee back to him at least 2 weeks before the competition. If you haven't yet received forms – or have any query – please do not hesitate to contact me.

GERALD BRUCE

MIDLANDS

Following our AGM held at Edgbaston GC our committee remains the same; as follows: President: R Pugh. Chairman: A Kite. Vice Chairman: M Hughes. Secretary: D S Cleaver. Treasurer: P Richmond. Committee: P Woodward, S Wood, I Beettlestone. Section Representatives: D S Cleaver and P Woodward. We thank Edgbaston GC for allowing us the use of their clubhouse for the AGM

Thanks are due to Walsall GC for providing the venue for our first lecture, with Peter Jefford giving an interesting and informative talk on top dressings, followed by a second speaker from M.M.P., who gave us a very interesting insight into how their products can be used with small machinery repairs. We thank both speakers for their time and knowledge.

Our next lecture will be at the Telford G&CC on March 20th, again with two speakers and beginning at 2pm with a talk on Trees by Martin Ford, followed at 3.15 pm with a talk on Machinery Maintenance by John Franklin.

Our first golf tournament will take place at Stourbridge GC on Tuesday April 7th. Please remember the closing date for this event is March 11th. If you have not received an entry form and want to play – please contact me on 0789 762912

DEAN CLEAVER

KENT

As we gear up for the coming season, I would first like to offer comment to Gary Mills letter which appeared in January Greenkeeper International. I think we all appreciate that not all green staff play golf or indeed wish to play golf, but nevertheless the term 'apathetic' could most certainly be levelled at the response received for other events we attempt to organise within the section.

I well remember the very poor response we received two years ago when we organised a series of three informal afternoon educational lectures throughout the winter. The numbers attendfinal lecture were almost as embarrassingly small for the speaker -Danny Godfrey of Inter Seeds - as they were for those who took the time and effort to organise the lecture. That is why we have no winter educational programme, favouring in future the repeat of a seminar (every other year) of the type and scale successfully held at Woodlands, Swanley. The same argument could be applied to the attendance at our section AGM last December, when all members were welcome to come along, indeed even to participate in the running of their section, but again the response came from only about 20% of our registered membership.

If Peter Biscoe dares venture over to Barnehurst I can assure him that our resident thieving crow is not so obliging as to drop the ball it steals. Our specimen undertakes a brief game of teasing the golfer, urging him to come and retrieve the ball, before disappearing with it into the nearest field. Its record so far is five balls in one afternoon, all of varying colours!

Best of luck to David Goodhew as the new man in charge at Lullingstone. David left Gillingham to fill the position for Golf Landscapes Ltd, whose maintenance division won the recent round of competitive tendering to secure the maintenance contract for Lullingstone. It will be interesting to hear of the different challenges created by working in this way, as opposed to those of a normal private club.

A reminder that our Spring Meeting and Iseki qualifier will be held at Darenth Valley GC on May 6th. The normal format will prevail: 18 hole medal AM and Stableford PM, plus the usual arrangements for meals. With the need to give more definite numbers to our hosts – and to assist in catering requirements and tee reservations – you will shortly receive a letter outlining the event, with a tear-off slip. Those who wish to participate should return this, along with a cheque. Naturally, we understand this means committing yourself somewhat in advance and calls for some

GREEN

effort in returning your reply, but many courses now require a more definite indication of numbers for groups and societies and we will be most grateful for your full co-operation. As an extra note I can announce that we will be playing for some very nice cut glass prizes, courtesy of Rigby Taylor. Please also bring your BIGGA membership card, complete with photograph, to all future events. We will be upholding the right of the host Club to refuse courtesy of the course to any person failing to produce his card.

Finally a note from our recently returned Welshman, Neal Carter of Birchwood Park. I recently visited his course and all seems to be progressing well. As you may know, he is a keen indoor cricketer and asked if any other Kent members would like to help in forming a team. Unfortunately the team consists of just two at the moment – Neal and his former assistant at Cobtree Manor. The minimum number required is eight and Neal would be glad to hear from anyone interested. His number (evenings) is 0622 750564.

PAUL COPSEY

EAST MIDLANDS

Our Spring Tournament will be held this year at Wollaton Park GC on Tuesday April 28th. Entry forms have already been sent out and I would appreciate an early response to help with catering arrangements.

For any section members wishing to undertake training for PA1 and PA2 spraying certificates, the course at Brooksby Agricultural College, Melton Mowbray, has been scheduled for March 23rd. Please contact Brooksby direct if you are interested.

As has already been published in Greenkeeper International, the enrolment fee for the "Master Greenkeeper Certificate" has been reduced to just £10. It has come to my attention that at the time of writing (Jan 31st) our section has only one member signed up for MGC – me! I am therefore appealing to you all, especially younger members, to support the scheme and enrol.

Finally, the section is pleased to welcome Peter Forshaw of Ramsdale Park GC within our ranks.

TONY HOWARTH

SOUTH WEST

It was a case of "there's no place like home". How well I remember my old home Club. All those rows with the secretary. The first letter of warning. The sack. Happy days! Seriously, it made a very pleasant start to the '92 season to return to Cirencester GC for the Modern Maintenance International Golf and Lecture day.

Talk about lucky with the weather. No sooner had the last competitor come in from the course than the heavens opened, with two inches of rain falling over the next twelve hours. It was certainly nice to see the Cirencester course in such good condition, and so hard to think that in less than three years there will be a four lane by-pass cutting right through it, causing the loss of four holes and shattering the peace and tranquillity for ever. Our thanks to the Club for their hospitality and the staff for their hard work.

Thanks also to Frank Chute and his team from Modern Maintenance International for their very interesting presentation on 'Terra-technology (or something) – the art of repairs'. Frank managed

to talk his way through a long list of different products, also demonstrating quite a few which could be of help in an emergency, or in routine in the greenkeepers workshop.

Congratulations to Steve Francom and Paul Thorn of Tracy Park on coming first and second in the morning round, narrowly beating Ivor Scoones into third place.

I'll take this opportunity to remind you all that nominations for the ICI Premier Greenkeeper of the Year award are now due. Send nominations to your section committee no later than April 30th: we are looking for a name and a reason for the nomination.

Finally, don't forget WESTURF on April 29th. If you manage turf in the West, you can manage WESTURF! But don't just come alone – bring your staff and Club officials for a rewarding day out.

PAUL WORSTER

NORTH WEST

The programme of events for 1992 has now been completed and all members in the North West section should have received a fixture list. The committee would especially like to thank BIGGA North West President, Arthur Harrison, and SISIS for sponsoring us with the printing and postage for the programmes. You will see from the fixture list that our first golf event is the annual match against the North Wales section. This is to be played at the Caldy GC on Tuesday April 14th, tee off time 1.30 pm. I will require a team of sixteen trusty men (on the basis of first come, first served), so any interested persons - get your name in early by calling me on 051 724 5412. If any members, especially those new to the section, are without a fixture list please call me on the aforementioned number.

BERT CROSS

NORTH SCOTLAND

A conference update for our November seminar in Dundee is that three further speakers have been found, bringing the total to eight. By the time you read this report in March the brochure will have gone to print, final details having been ironed out at a meeting with the sponsors. I would like to take this opportunity to thank the Chemical Spraying Company, Frews, and M&M Turf Products for assisting us in this project. In the next two reports I will profile the conference speakers.

Although I did not make it to Harrogate, I got a full report from one of our competition winners, my assistant, Gordon McKie. It was good to hear that quite a number of North Scotland members attended this year, as I believe I was the only one in 1991. It sounds as though it was another successful week and I'm glad that Gordon had such a good and educational time, especially as he was sharing a room with our illustrious chairman, Dougal Duguid.

Our first outing this year will be to Montrose GC on Thursday May 7th and I urge as many members as possible to enter. I hear that Montrose is a fine links course and well worth a visit. Entry forms will be sent out in early April – so enter quickly!

Finally I would urge all members to send any snippets of news from within the section: career movements, births, marriages etc., so that I can vary my reports a little and spread news of our section activities to all members countrywide. I don't want you to get bored with my reports just yet!

IAIN MACLEOD

DEVON AND CORNWALL

Some 68 members and 21 students attended the Devon & Cornwall section seminar, held this year at the excellent venue of Fingle Glen Golf Complex, near Exeter. The morning started with Devon taking on Cornwall in a nine hole match, the winning team (as usual) being Devon, returning six cards totalling 110 points to beat Cornwall with 103. The best score from Devon was John Breyley with 21, this gaining him a pair of cut glass goblets donated by Rigby Taylor and the best Cornish score was that of Richard Minton also with 21 - but declaring himself out of the prizes and allowing J Bullen to collect the prize of a video presented by - guess who? - Richard Minton! As is usual, the course was presented in excellent condition by our chairman, Bill Pile, and his staff.

Following a superb lunch the 'Dry Patch and Wetting Agents' seminar got underway, with Dr Neil Baldwin presented his paper on Dry patch. Neil, who is a plant pathologist with the STRI, told of his research into this problem, funds for which are being provided by the R&A.

Neil's talk was most informative and I am sure he has made all of us more confident when dealing with Dry patch. We thank him for presenting his paper and for making the long journey West. In addition, the section thanks Mr Breading and Fingle Glen GC for allowing us the use of their excellent facilities.

Special thanks to all our trade friends who took stand space, these being Avoncrop and ICI, PJ Flegg and Ransomes, Devon Garden Machinery and Toro, Rigby Taylor, Roffeys, Fisons, and Willcocks. We hope they found the day successful.

RICHARD WHYMAN

S. WEST AND S. WALES 'ARCTIC EXPEDITION'

On the clear frosty morning of January 21st, our coach arrived promptly at 9am to begin our 'journey into the unknown'. All seemed well at the first pick-up point - Exeter G&CC - and with half our party on board we proceeded to the M5.

AROUND THE GREEN

Flashing lights soon revealed that our boot door had flown open and a few miles and a few more flashing lights later we also discovered the loss of an excessive amount of water. It was decided to proceed to junction 24 for our loneranger (waiting in a lay-by), and we just made it! Then the coach stubbornly refused to move and after some pondering it was decided to withdraw to the nearest pub and communicate the problem to those waiting 'up the line'.

After a 150 minute delay a second coach was commissioned and we continued our great adventure, having been adequately fed and watered in the pub, setting off for the M5 once more. A few miles further and it became painfully obvious that no heating was included in this package deal. However, the regional administrator was determined to take his party to the hinterland and having made Bristol and our last pick-up safely, we continued our trek to the BTME.

Temperatures were falling and there was danger of hypothermia, so no one was allowed to sleep. Great initiative was shown by a Board of Management member who turned his cap inside out and proceeded to keep the windscreen clear for the driver. Finally arriving at our destination some three hours late - those able bodied members of the group still capable unloaded the coach, while others tried to free themselves from the refrigerated container.

At breakfast the following day an amazingly good humoured party ate heartily in readiness for the opening of the 1992 exhibition, showing no signs of their endurance test ordeal. Having taken-in the seminars, walked the exhibition hall and met old friends, we were able to enter first class teams in the quiz night, though in being so young at heart our team was just beaten by failing to remember Max Bygraves! Some then decided to take Harrogate by storm and one talented trio won the Karaoke at a night club, the name of which cannot be remembered, whilst others drowned their sorrows, with some sad results.

Rising next morning bright and early, we were once again greeted with sub-zero temperatures. Undaunted, we sallied forth to the exhibition halls and another excellent day of looking and learning. Continuing extreme cold in the evening suggested that taxis be laid on for those who were banquet bound and a superb meal and top class entertainment gave us a night to remember or for some a night which cannot be remembered, though a good time was had by all.

The final day proved no less exciting than the others, with a warmer journey home anticipated. Saying our farewells we prepared to leave at 12.30, with everyone ready and on time. Once again it was not to be, for our coach seemed to prefer Harrogate and after two hours delay a new coach was boarded - leaving the first vehicle to rest in peace. This proved to be the best decision made all week and a warm and comfortable journey was achieved at last - even prompting an outburst of song. Despite the trials and tribulations, everyone wished to take up the challenge next year.

With time to reflect on the disasters of 'modern' transport, it has been suggested that we may have to resort to horse drawn carriages for 1993, these seeming more reliable. However, stops will have to be made at Bristol and Birmingham for a change of horses, though this should not -62

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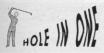
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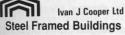


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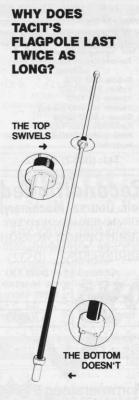
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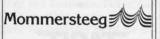
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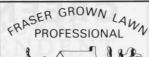
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Brancepeth Castle Golf Club, Durham on Thursday 9th April 1992

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D&E Turf Maintenance Ltd, St. Johns Schoolhouse, Central Parade, Shildon, Co. Durham DL4 1DL. Tel: (0388) 772844: (0836) 376944 NATIONWIDE SERVICE 54 and unduly to the time taken in '92. As numbers will be limited for this adventure, preference will be given to those prepared to take an active role in feeding and mucking out and a duty roster will have to be drawn up. Comments and suggestions will be appreciated, as this annual event is destined to continue.

On a more serious note and on behalf of the entire party, I would like to congratulate the staff on a superb job in organising the whole week. The exhibition was excellent and the seminar programmes better than in previous years. You have set a standard which you may find hard to sustain, Well done! We look forward to next year.

PS: The writer wishes to appeal to the person who took his suitcase – perhaps by mistake? Please, please return it.

GORDON CHILD

CENTRAL SCOTLAND

Hi folks, at long last some news from the Central section. At the first meeting of your new committee, held recently, a great deal of time was taken in discussing ways in which more of you can be encouraged to participate in section events. So watch this space in the coming months.

Dates already confirmed for your diary are the Spring Tournament at Crail GC on April 14th, the Autumn Tournament at Kinross GC on October 8th and the Annual Prize Draw Dinner at Stirling on December 4th. The Spring Tournament will be the

GREEN

ISEKI qualifying round and numbers at Crail are limited to 40 players. When forms are circulated, be sure to return them early.

It has been decided to continue with the Prize Draw, which is the biggest fund raiser for the section – notwithstanding some £300 worth of tickets not being returned, despite reminders! How many of these were sold and not returned? Those of you who failed to make returns will know the answer to that question.

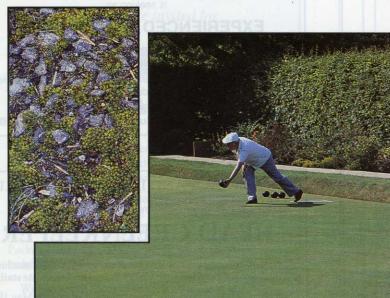
It was pleasing to see so many Central section members at BTME and I'm sure everyone who attended voted the event a great success and will be looking forward to Harrogate and BTME in '93.

As we approach another season, the committee send best wishes for a successful year, especially to those who have recently moved to new positions.

Finally, if any member has ideas for what might or should be happening in the section, please contact me or any other member of the committee and we shall try to fit such ideas into the programme. Please also remember that 1992 membership cards will be asked for at ALL section events – so be sure to carry your card with you.

JOHN CRAWFORD

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