

Greenkeeper

NOVEMBER/DECEMBER 1982



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VICTA

PROFESSIONAL MOWERS

Greenkeeper

NOVEMBER/DECEMBER 1982

Publisher: A.Quick & Co Ltd

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Editor: Robin Stewart

Advertisement Manager: Kay Moss

Contributors: Jim Arthur, John Campbell, Fred Cox
Eddie Park, Frank Pennink, Donald Steel, John Stobbs

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EIGGA — It's the best thing to happen in an age!



THIS month sees the unveiling of a new association for greenkeepers — the English and International Golf Greenkeepers' Association — which has adopted *Greenkeeper* as its official journal. The new association will offer all greenkeepers who become members a very attractive package and, for the future, the prospect of greatly enhanced status and rewards. The membership form enclosed with the magazine outlines what membership of EIGGA offers and it is hoped that many greenkeepers who have never belonged to an association will be interested in the details.

The objects of the association shall be to explore and advance all aspects of greenkeeping. To assist and encourage the proficiency of the members to arrange symposia, functions, fund raising activities and competitions for the benefit of the members, to act as an employment agency and to collaborate with any bodies that would be to the benefit of the members and to effect any other objects of a such like nature.

All members will receive a copy of each issue of *Greenkeeper*, which will contain news and information for the association's members.

Membership is open to "Any person employed by a golfing establishment in the role of a greenkeeper, whether in a managerial or practical position". The subscription for the forthcoming calendar year will be £12 for full members and £9 for all apprenticed members (whose rights and status will be recognised by all the relevant national bodies).

There are three forms of membership available to the trade — National Company Membership, Regional Trade Membership and Individual Trade Membership, which is open to "Any person who is affiliated to the trade of turf culture who shall be able to take out membership under his own name and be able to attend meetings and functions of the association including the Annual General Meeting, but without voting rights". The subscription for a trade member will be £16.

Included in the subscription is a 24-hour life assurance and disability cover for the member at work and at home.

Membership will also provide a trade discount on such items as clothing through a national men's outfitters, car hire, car insurance, holidays, as well as a private medical care plan and pension scheme.

Already the association has its national headquarters

Continued on page 11 . . .

RED ON GREEN

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TORO

GREENSMASTER FROM TORO
WORLD LEADERS IN TURF MANAGEMENT

In My Opinion

MOST parts of the country experienced long dry periods this summer. Greenkeepers worked hard to make golfing pleasant for club members by providing the conditions golfers wanted. The members enjoyed running fairways and the well-watered greens largely flattered their ability.

The awkward question now is will this policy turn out to be a long-term disaster? A drought is a great opportunity to get rid of a lot of rubbish; shallow-rooted poa dies out and the ecological balance is tipped to favour the establishment and spread of fine, deep-rooted grasses.

With minimum watering — just enough to keep these grasses alive — we would have seen brown and rather bare looking greens. Fast to putt on, but very firm even with the resilience imparted by the dense roots of bents and fescue. Only the really well struck shot would hold on such a surface.

So the cries of outrage go up from all those golfers who do not strike the ball quite as well as they think they do. Water is poured on and the balance then swings in favour of poa annua and, indeed, with prolonged saturation, thatch is not far behind.

The autumn and winter bring soft bumpy greens and the need for winter greens with all their deficiencies. Most people have realised by now that late fertiliser is no answer, so we will probably be seeing some pale yellow greens by now.

Who causes all this? Of course, it is the golfer, who arrogantly imagines he can always have the conditions he wants — irrespective of season and weather. He is quite unaware of the disastrous side-effects he is bringing along behind.

By Eddie Park

Nor is he, so far, aware of the appalling expense.

I know courses with well-managed poa annua greens that are now spending over £10,000 in fertiliser alone. Then add the cost of watering systems, chemicals to keep disease at bay and the eventual cost of men and machines for renovation when things really get too bad.

Yet, still it goes on. I know one senior greenkeeper striving to bring his course back to a high standard. For his pains he faced a complaint to the committee by the best dozen players in the club demanding heavy daily watering. He couldn't really tell them the trouble was they weren't good enough golfers for the prevailing conditions!

I believe ignorant golfer power is the major force in golf course maintenance today and I fear that some greenkeepers have made their position even worse by attempting to take over the functions of the green committee as well. How can he possibly deal with 500 selfish men who each consider they are his employer? It is an impossible situation.

How can things be improved? There must be someone in each club able to resist the demands for incorrect treatment. There is much talk of improved greenkeeper training and that must be right. But the main reason why it must extend to a higher level is so the man in charge really knows more than the golfer and can back his arguments with well-established sciences. That would be a real

improvement in status. The fumbling attempts at greenkeeper training so far have done little more than provide an introduction for the beginner.

It is certainly true to say that golf greenkeeping has not had a fair crack of the whip from the major golfing bodies. Here are just two examples:

1. The national golf unions have a considerable representation on all committees connected with greenkeeping. But how often have they sent along people with real expertise and knowledge?

2. The fact that so much of the research at the STRI is devoted to the problems of soccer suggests to me that golf has not contributed anything like a real share of the expenses of that body. And yet golf has the most to gain. The USGA, the American counterpart of the Royal and Ancient, funds and administers its own greens section. We could do with leadership like that.

The sports media should, but certainly don't help at present. They write or talk at length about players, but courses are either not mentioned or the subject of uninformed comment. Again, we are back to ignorance.

I sometimes hear that Jim Arthur has failed at some courses. It always seems unlikely bearing in mind his superb skill in making a diagnosis of whatever problems exist and providing a full treatment plan to correct them. It doesn't take long to realise that almost always his advice has not been fully and correctly implemented or, worse still, "improved upon."

It may be an awkward greenkeeper who doesn't want advice, but more

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Out On The Course

John Stobbs travels to Turnberry



"WHEN we had the Open Championship here in 1977, and it proved such a great success, that was the proudest moment of my life," said Jim McCubbin, who retired as head greenkeeper at Turnberry recently. Anyone who saw that Open will understand his feelings well enough!

For Jim, taking the Open carried, from the outset, a special local hazard. Turnberry, a great links course attached to a fine hotel, has always been, first and foremost, a commercial course.

Its purpose was (and is) to serve the hotel and the needs and tastes of visitors. And that will always mean presenting all the time a course of the kind of an Open, at only three years' notice, play — always in the best possible playing condition on whatever day they have booked to enjoy it.

The potential difficulties lying in that situation for any head greenkeeper determined to work his course up into peak playing condition, and then keep

it there indefinitely, all year round and year after year, need no explanation.

Jim McCubbin, who had worked continually at Turnberry since the 1930s, naturally found the scheduling of an Open, at only three years' notice, something of an upheaval to his normal way of life on the course. "We had, at once, the problem of serving two ends — turning it into a championship-standard course, while keeping it in play all the time for everybody at the same time.

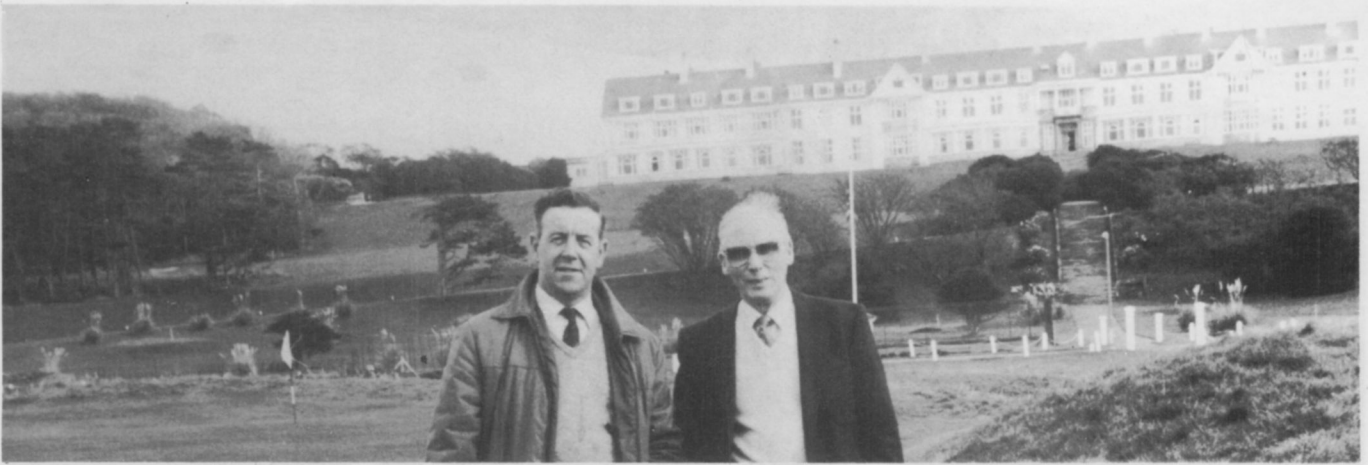
"Championship golf is totally different from the kind of golf we had been living by up until then. Suddenly, we were trying to prepare a course for the best players in the world — not quite what we had been adjusted to! It had been a purely commercial course and then, all of a sudden, we had to narrow the fairways down, grow on the rough and so on. It had taken years to get it as it was and then we had to reverse some old priorities.

"You need a clear four years' notice if you are to get the fairways sparse, too, and the greens firmer and faster. Still, with Jim Arthur's help, we made it in the end. People thought we'd done a good enough job.

"We had that battle between Nicklaus and Watson, right out on their own a dozen strokes or so under par. But, remember, almost all the rest of the field took more than par, even given the easiest conditions of wind and weather we had ever had for any major event here before.

"They couldn't blame the greens. During the Open, we cut them twice every 24 hours, once every night and once again in the morning, right down to 5/32nds — a tight 3/16ths as we put it then. We were still using hand mowers then, of course, the Atco Specials. I have always thought them better for any course than triples. If you sit on your backside as you mow, you lose touch with the greenkeeper's

Out On The Course



Russell Brown (left) and Jim McCubbin in front of the 18th green on Ailsa and the familiar Turnberry Hotel skyline.

best friend — your feet. Your feet can tell you a lot about any green, once you know them all well."

On his retirement in autumn, Jim handed over to Russell Brown — who arrived from Prince's. A Scot back in his native land again. Already, after a taking-over period, he is well into a close acquaintance with and understanding of his new charge.

"One of the things that most attracted me about the possibility of coming here," he said, "was the fact there is no green committee! As head greenkeeper, I'm in sole charge of the course, working directly with the main Turnberry administration. I look after the course for them and cater for their needs as they pass them on to me.

"But a main factor in that now, of course, is being on the Open Championship roster. That, in itself, now determines to a large extent all our greenkeeping policies and methods. Being on that roster — and staying on

it — is as important to the commercial success of the whole enterprise and operation here as it is to me on the course. What it must be worth in publicity every few years, you can well imagine.

"From now on, then, that dual aim Jim discussed becomes the ruling one here. Both good golf all the time for all who come here and golf of championship standards ready all the time on demand."

Russell was born in a greenkeeper's house beside the 2nd tee at the Craigie Hill course, Perthshire. "My grandfather was head greenkeeper there. In fact, he helped make the course, after working at Muirfield and Troon. My father worked under him from the start, before he took over in his turn. By the time he retired, he had been there for 48 years.

"So I went right into the greenkeeping world as a boy. I grew up with it there. And with golf, as well. I got

down to scratch and played for Perthshire. I won the county championship there five times. But that was before I became a headman anywhere, of there five times. But that was before I course."

His previous head greenkeeperships, after he moved from Craigie, were at Muckhart in Clackmannanshire — where he helped build a second nine holes — for some five years; Rowlands Castle in Hampshire for another six years and then Prince's beside Royal St George's at Sandwich, Kent.

He found Rowlands Castle a difficult course to look after, but a good club to work for. It was while there that he first came to know Jim Arthur and on his own initiative, too. Russell described his relationship with Jim. "When I was at Rowlands Castle, I went to a BGGGA regional meeting and heard a lecture from him. I was impressed. I found him saying that, no matter what kind of ground you are looking after,

ALL IN A DAYS WORK...



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Out On The Course



Since Turnberry joined the Open Championship rota, the natural links fescue has been creeping back into the greens. Russell shows it coming in from the surround.

you want to follow the policy now classed as Traditional Greenkeeping — no different from what I had been taught by my father 30 years ago!

"I felt after that evening that here was a man we'd been waiting for. I reported it all back to my club and they authorised me to invite him to advise us. I've been working happily with him ever since and we've never had a serious disagreement.

"It helps that I have always believed that you treat every course the same, whether it is on clay, sand, gravel or whatever. Some courses may need a little more of one thing and a little less of another. But the fundamentals are the same."

So what are those fundamentals and how does he intend applying them to Turnberry's two courses — the championship shoreside Ailsa, amid great sand dunes and on higher reaches of sand blown up on top of the rocky promontory by the famous lighthouse and

the Arran, on the shoreward side of the Ailsa, flatter, more heathery-gorsy, less directly exposed to the sea and all that blows off it?

First, plenty of aeration — putting surfaces, tees and fairways alike, of the kind we've all read about already. At present, he is slitting greens weekly with the Cushman. "We're using the 5½-inch tines, but we're not going down the full 5½ inches yet. When I can get the 5½-inch right down, then I'll go to the 7½-inch ones.

"Do you know how much wear and compaction we get? Something between 75,000 and 80,000 rounds a year on the two courses together. And over the Ailsa, practically every other fourball takes four caddies with it at the height of the season, doubling that match's compacting effect!"

Second, top dressing putting surfaces with the Cushman little and often using a mixture of equal parts of the loam, peat and sand already laid on there and

then perhaps Fendress later, of which he has a high opinion.

Third, sticking to the traditional spring-dressing mixture of equal parts of hoof and horn, dried blood, sulphate of ammonia and sulphate of iron — all mixed with 50 per cent ordinary top dressing as a carrier. He aims to put this traditional mixture on once in the spring and then once again later, maybe around the end of June if he finds it necessary. In the autumn, he aims to put on just sulphate of iron at about ¼oz to the square yard.

Fourth, if he does ever need to thicken up growth on Turnberry's naturally fairly sparse fairways, a cautious use of Farmura, watching its effects carefully afterwards for any change in the composition of fairway mat and sward for better or worse.

Fifth, avoiding, so far as possible (but by no means entirely), the general use of weedkillers. "When you use anything like weedkillers, you're also

Out On The Course



Looking back down the 10th green towards the tee up on the horizon top right. The monument is to servicemen who flew from Turnberry during the last war. What was the airfield now forms part of the Arran course.

attacking the very thing you want to build up, your ground and the bacteria and other life in it. Moreover, weed-killer doesn't kill all the weed seeds. I believe the least amount of chemicals you can use, the better.

"So, I intend to do a lot of hand weeding here for everything you can just dig out, such as daisies, plantains, creeping buttercup, hawkbit, starweed, etc. But I'll still expect to have to use weedkiller for things such as clover, parsley piert, pearlwort, chickweed, etc.

"Luckily, we don't seem to get much trouble with turf diseases here, which is to be expected after the kind of methods Jim McCubbin used in recent years. A bit of Red Thread, naturally, on the fescues. But I haven't seen anything else here yet."

Finally, mowing to that "very tight 3/16ths" every 24 hours all through the growing season, using Jacobsen Triples

Jim McCubbin acquired.

For hand mowing, Russell prefers the Autocertes. "I've always been a Ransomes man, myself." In October, he believes in going up to 4in cut, "because of the amount of winter wear we get here. You'll get a lot more ground cover like that."

Of course, Russell will deal with, as the need arises, all the detailed work, such as repairing/controlling trolley passage around the greens, giving special attention to any heavily worn areas, checking for any old under-fairway drains in the several below, or near below, sea-level hollows in among them and, if necessary, clearing and repairing them.

He has found and repaired one already, in the notorious wet spot half way up the 5th fairway.

I asked him about his views on greenkeeper training and on the future

of the profession. "Well, I think Jim Arthur's quite right in saying the instructors themselves need instructing first before we can really get anywhere. There are good ones, of course. But when so many greenkeepers can't identify grasses — well, none of us can claim to do that exactly all the time, but I mean identify clearly the right kind of grasses — and when some head greenkeepers, as a result, think fescues belong to the kind of grasses they don't want, there's clearly need for better instruction!

"As to our professional position, I am joining SIGGA. We all have to belong to the National Union of Railwaymen first, as does everybody working up at the hotel, for so long as Turnberry remains part of British Railways.

"I do think greenkeeping needs a fully professional association of some kind.

GETTING DOWN TO GRASS ROOTS...



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Section News

Kent

Notes by Peter Wisbey

The autumn meeting of the Kent section was held at West Malling GC on October 12th. The morning medal was played under wet conditions following rain the previous week.

It proved yet another win for Peter Sharp from Dartford with a nett 74; second was K. Noble (Darenth Valley) with a nett 76 and third was Chris Marden (West Malling) with a nett 78.

In the morning scratch, George Brown (Broome Park) finished on top with a gross score of 78.

An afternoon Stableford over nine holes, played in pouring rain and over flooded greens, saw Keith Noble emerge a worthy winner with 19 points. Second (on the last six) came Chris Latham (Broome Park) with 18 points — a score shared by Peter Sharp.

The morning guest prize was won by Peter Farmer (nett 77) and the afternoon prize went to H. Wardrop with 19 points. Bob Cook, from T. Parker, took the trade prize.

After an excellent meal, a meeting was held to discuss the section's views on continued affiliation to the BGGA.

A proposal was put forward by P. Wisbey that members of the Kent section should move En bloc to the English and International Golf Greenkeepers' Association. This proposal was seconded by J. Atkins and adopted unanimously.

Mr. Wisbey proposed, in fairness to both the BGGA and Prince's Golf Club, that the Kent section of EIGGA — as it will be known in 1983 — should offer to assist in the running of the National Tournament to be held at Prince's in August. This was seconded by George Brown and adopted unanimously. A letter to Walter Heeles stating this offer was to be sent as soon as possible.

Finally, votes of thanks were recorded to West Malling course Manager Chris Marden and his staff and the steward and staff for the meals provided. Thanks were also expressed to Paice and Son, Hugh Page, T. Parker and Sparfax Tools for donating prizes and to Bob Cook for organising the raffle.

The first winter lecture took place in early November at North Foreland GC with a lecture by Nick Rigden of Plumpton College (Sussex) on greenkeeper training.

This will be followed by Gerald Brooks of Huxleys discussing budgeting for machinery replacement — this talk is to be held at Rochester and Cobham Golf Club on December 14th, starting at 8 p.m.

East Anglia

Notes by Mick Lathrope

Our last match of the year at Frinton was a success for all concerned. The course played well, despite a blanket watering system that didn't miss anything or anyone. For my money, Frinton's hospitality is second to none. You had the feeling that everything done for us was in genuine appreciation of our work, which is always good for morale.

One pleasing sight was Roger Plummer taking the cup, with the greenkeepers beating the captains for the first time in the event's history. Nine matches to eight was the result. Close, but a win is a win. Scores: Greenkeepers — R. Plummer, 34 points; R. Smith, 32; D. Jones, 31. Guests — R. Holder, 35 points; G. Eves, 34; G. Freear, 33.

Jeff Fayers was presented with an engraved tankard to mark his retirement in the near future from St Clements Hospital Golf Club. Well done, Jeff. Our congratulations are also extended to George Newson of Felixstowe Ferry Golf Club and Clive Hockwood of Bortrum Mowers on their respective marriages.

As everyone looks forward to the new association, I hope we have learned from the BGGA's shortcomings and can make EIGGA something to be really proud of.

The message to consider for our success is . . . Be An EIGGA Beaver!

Sussex

Notes by Ron Jobson

Summer's golf closed with a successful autumn tournament at Seaford Golf Club, which — to his credit — is managed by Bob Moore. Winners were: Medal — G. Solley; Stableford — D. Jones; Golfer of the Year — L. Morris and Scratch Golfer of the Year — R. Barker.

For the 'foolhardy,' the section's winter greensomes are being played and

our first Turkey Trot took place at Ham Manor GC on December 2nd.

Sussex greenkeepers would like to take this opportunity to thank the following companies for their continued support. They are: Rowes of Chichester; T. Parker and Sons of Worcester Park, Surrey; Ransomes of Ipswich, Suffolk; Hugh Page; TMS of Iver Heath, Bucks and John Field, and Farmura, Ashford, Kent and Jonathan Harmer.

Heartfelt thanks also go to our president Squadron Leader D. Green and to the vice presidents for the help and support they have given to greenkeepers, golf clubs and friends.

No doubt, you have all got your fixture cards so non-attending members will know that winter lectures are held alternately at Cottesmore and Worthing Golf Clubs on the first Monday of each month. The Christmas Ball will be held at the Goffs Park Hotel, Crawley on December 15th.

Follow our EGM, it was the unanimous decision of the membership to join the new English and International Golf Greenkeepers' Association.

Surrey

Notes by Kenny MacNiven

Due to increased pressure of work, Jack McMillan, our chairman, has asked Jim Liddington to take the chair for the remaining months of his term in office.

In September, section secretary Frank Brittin resigned and I would like to take this opportunity to thank Frank for all the hours of hard work he has put into making the section a success.

On October 5th, an extraordinary meeting was held at the New Zealand Golf Club, at which it was decided to support the formation of EIGGA.

The autumn invitation meeting was contested — by courtesy of Foxhills — over the excellent Chertsey Course. Winners were: A. Morton and P. Finn (West Byfleet), who were closely followed by S. McKay and J. McMillan (Sunningdale).

A Stableford competition (take a prize, win a prize) will be held at Effingham Golf Club on December 13th. This will be followed by the Christmas dinner and prize draw. A. Morton will also be presented with the Golfer of the Year award, donated by John Swinstead of Ben Turners.

It's the best thing to happen in an age! Continued...

at Malden Green Farm, Worcester Park, Surrey and it is proposed that, by the time the first AGM takes place in May, a full-time administrator for the association will have been appointed.

The association will be run by a board of management of six members, who will have been elected from the six country-wide regions, each region comprising three branches, who will elect members to the regional committee.

The board of management will be responsible for instructing the general administrator, who will look after the day to day running of the association.

Efforts have been made to enter into discussions with the Secretaries' Association to establish a minimum wage structure. However, this has proved to be unsuccessful. Therefore further negotiations will have to take place with interested bodies, in an effort to establish a minimum wage and standard conditions of employment.

As the emphasis will be very much on trying to improve the status of greenkeepers, a new syllabus is being prepared which will allow head greenkeepers to sit an examination to course management level. This will be a natural progression from the current City and Guilds qualifications and will improve the standing of all head greenkeepers who are successful.

Hopefully, there will also be a three-day educational conference next May at which many aspects of greenkeeping will be covered, with special attention being given to the maintenance of machinery, budgeting and construction.

EIGGA will be affiliated with other greenkeeping associations and the English Golf Union and recognised by the Greenkeeper Training Board.

Already, greenkeepers in East Anglia, Berks, Bucks & Oxon, Kent, Surrey, Sussex and others in the south are committed to EIGGA, while great interest has been shown by greenkeepers in the Midlands and north west.

All greenkeepers must fill in a membership form and are also requested to nominate the branch to which they wish to belong. Where a golf club or the club secretary pays for the greenkeeping staff's subscription, there is a ten per cent discount.

EIGGA membership provides

- A trade magazine — *Greenkeeper* — with your news and views.
- An insurance scheme — giving 24-hour life cover and disability payments.
- A national headquarters.
- Eventually, a full-time administrator.
- Wage structure recognised by the National Wages Council and Secretaries' Association.
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- Employment register.
- Optional private medical care plan and pension scheme.
- National Educational Programme with examination certificate to course management level.
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- Stationery service with association logo and book service.
- Three-day Annual Educational Conference and Golf Tournament.



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The opening day will include lectures by representatives of the Sports Turf Research Institute, and George Shiels.

On the second day, William Amick, past president of the American Society of Golf Course Architects, will speak. He will be followed by Hamilton Stutt and a member of the Professional Golfers' Association outlining a pro's view on golf courses. The before and

after tea session will be taken by Martyn Jones and George Shiels.

Installing irrigation and the maintenance of golf courses in the British Isles open the third day's programme. These will be followed by demonstrations of maintenance and construction machinery by Ransomes, Toro, Jacobsen, SISIS, Cushman and Cambridge Soil Services. Finally, Jim McLoughlin, executive director of the Golf Course Superintendents of America will describe how courses are maintained in the USA.

Greenkeeper correspondents Jim Arthur and John Campbell, with Dr Peter Hayes and Martyn Jones, will close the session by debating the importance of the advisory agronomist to the

design, construction and maintenance of courses, which will be followed by a discussion forum.

The costs, including all tuition, meals and accommodation (in single study bedrooms at the college) for the session are £96 for members of the BAGCC and £124 for non-members.

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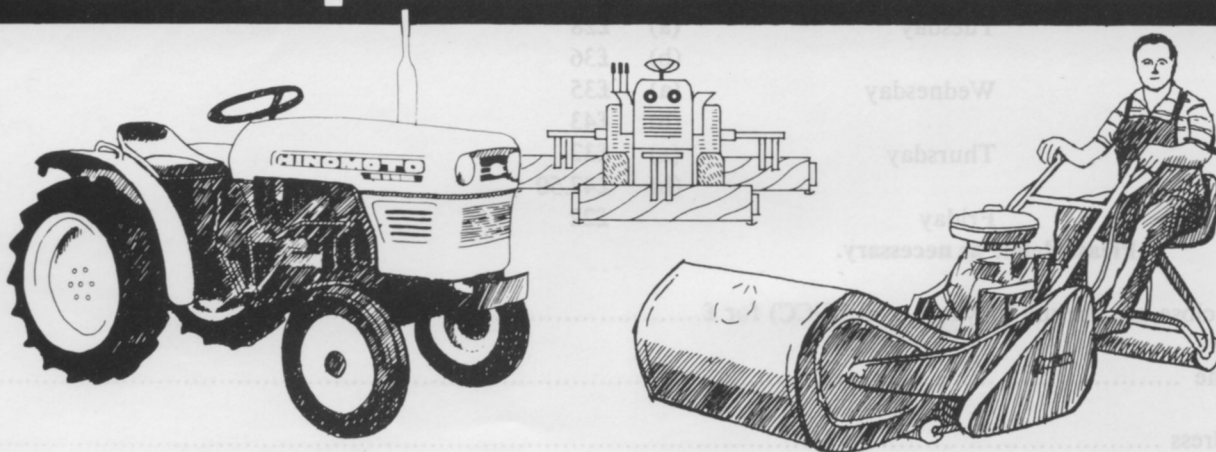
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WHATEVER else may be said about them, the last twelve months have in no sense been humdrum, though most greenkeepers would, I think, join me in preferring to forget about the weather this year.

It was not so much the severity of the individual seasons, but the combination of one stress situation following another. We had hardly adjusted to a very wet autumn when snow and ice hit us abnormally early in December. My advisory work is geared to a very full programme until just before Christmas, but a less rigid programme in January, as from experience I know that it is then that visits have to be postponed because of snow or frost — the two factors that really stop me.

This past winter, I did not see a golf course in this country from the time I was snowed off on a visit on December 8th until January 20th. Perhaps the worst problem of that long six weeks was not so much the severity of the frost — often down two feet or more into the ground — but that there were one or two thaws, when the snow and ice melted briefly, and water was trapped deep on saucered greens (as the underlying soil was frozen hard) and then froze again.

The wiser men got it off as best they could because the effect of this ice with subsequent sun and trapped gases killed off annual meadow grass already under severe stress, though bent (*Agrostis*) was not so badly affected.

The snow eventually went and, indeed, many greens benefitted from the enforced rest. One characteristic of last winter was that greens on adjacent courses fared very differently under the same climatic conditions. Any greens that were thatched and dominated by annual meadow grass were looking very sick by the end of the winter, yet parallel greens were so good they could well have taken a major championship at short notice.

This emphasises the point I am never tired of making — even if readers are tired of hearing it. Golf is a business depending on full use of all facilities (including full greens) for as near 365 days a year as is possible — and there is no way annual meadow grass dominated, thatchy greens can provide reasonable putting surfaces, certainly not when there is no growth, or surface damage is impeded by a soggy, spongy layer of dead vegetation two inches or more thick, over often reasonably well-drained foundations.

There was, in fact, a mild spell in March and foolish innocents went about prophesying an early spring. This false

That was a year that was... Jim Arthur's 1982 review

spring occurs every year just before the easterlies start, bringing back winter with a vengeance. For years, wise greenkeepers have seized this brief respite to help their greens over the winter with a light 'ammonia and iron' dressing, which can be absorbed if there are a few days of growing weather, but over which no tears need be shed if it is wasted.

This year, in April and May, we had the worst spell of cold, dry easterlies I can remember — yet brilliant sunny days. Golfers thought spring had come — greenkeepers knew better. I remember in early May arguing with the green convenor of a Scottish club that he should not bow to the vociferous demands of his members and overrule his head greenkeeper by ordering him to start watering, as there were still severe night frosts.

Indeed, on courses where pop-ups were unwisely started up, the water had been freezing and jamming the pop-ups, which next morning were festooned with icicles.

However, my convenor was not convinced. The weather was sunny, if cold, and he was sure spring was here. I finally exploded — and explained that if he got up as early as greenkeepers and I do he would have seen half an inch of ice on the water butts that morning. The next day we had four inches of snow. I think he blamed me for trying to convince him the hard way, but I have no direct line to the clerk of the weather!

In many parts of the country, greens were played on incessantly, apart from this enforced six weeks' rest, but there was no growth to aid recovery from wear and tear for an almost unbelievable eight months. No wonder many greens looked sick and the sickest were annual meadow grass greens, on many of which the grass had actually died out

for a number of reasons, but chiefly because the existing plants had, under stress, reached the end of their life cycle, shed seed and died.

Growth started late everywhere — nowhere more so than in Scotland. This had several side effects, but one undoubtedly was that there was no early grass growth to compete with clover, which often dominated greens and fairways alike. Normally, of course, as clover starts growth later, the grass, having had a head start, will keep it back, but not this year.

On the other hand, the hard winter had sorted out some of the pests. Severe leatherjacket attacks are becoming less common, but this is perhaps because on so many courses where there has been a chronic history of plagues, precautions are taken with preventive spraying of even all the fairways, as well as greens and tees.

Nevertheless, it is a surprise to me how high the crane fly populations were on the west coast this early autumn and, indeed, how late the hatch. Anyone who has not taken precautions by now should certainly heed the warning signs. Even if they do wait until the first signs appear next spring — i.e. bleaching and bird damage — they should have the necessary insecticide ready, as hours can count, let alone days.

The tournament season started this year almost in winter conditions. The Martini at Lindrick in mid-May was played on greens that had had only one week's growth to recover from all the problems of a severe winter, including an attack of snow mould. Putting surfaces were, by common consent, superlatively fast and true, yet criticisms were made that the greens did not look green. What are we supposed to do — put glasshouses over greens or paint them with green dye to make television audiences content?

The verdict lies with the players and it is, I think, undisputed that the standards of presentation of courses for most tournaments and all championships has risen steadily. One of the problems with preparing courses for PGA European Tour events is that sponsors have a big say in the tournament venue.

Consequently, Bill Duston (who has masterminded Fulford for many years and produced such superb conditions for the Benson & Hedges) and I are faced with often quite impossible tasks, with too little time to achieve more than minimal improvements for 'one-off' venues for the PGA European Tour, to whom we act as advisers.

With championships, by and large, there is much more warning as the championship committee of the Royal and Ancient plans far ahead and gives me time to work on a long-term basis, and so with a more effective programme.

It always saddens me that virtually never is the head greenkeeper of a championship links given the opportunity to get over to the vast golfing television audience just how much hard work, long-term planning and intensive preparation go into producing the superlative condition, which is too often taken for granted.

If it were not so sad, you could smile at the comments made when Norman Fergusson was interviewed after the last Open by BBC Television. "And how long will it take you to get the course back into good condition?" asked the naive interviewer. "I thought it was in very good condition at this moment," replied Norman. Indeed, the problems after Open Championships and major tournaments are never on the course, but in the repair of pedestrian damage and, above all, despite track discipline and movement control, in getting heavy vehicles (dare I say it, including television 'pantechinons') off the course without getting bogged down.

After such a disastrous combination of a severe winter and a long, cold, dry spring it was not surprising that there were legacies of damage on some courses, but these again were primarily on annual meadow grass dominated greens. Intensive remedial work and skilled routine maintenance sorted out most of these problems eventually — even if in some cases annual meadow grass was encouraged to return by unwise, ad lib feeding and watering.

Opportunity

Sensible greenkeepers took the view that at least what they had lost was what they wanted to lose — and made the best of the opportunity so presented to increase the *Agrostis* (bent) problems in their greens.

Remedial measures were not helped by the summer droughts that followed. This, again, sorted out the wise who had upgraded their irrigation systems, from the foolish who averred that it was a waste of money spending anything on an ancient, badly designed pop-up system, when they had only used it for a few days in the past three wet summers.

I can never understand why the main irrigation companies do not go back to

the clubs on whose courses they had many years ago installed systems, which do not now comply with the yardsticks laid down by the British Turf Irrigation Association, to point out that they know more about installations and design than they did, "so can we come and upgrade it, please?" Instead, too often they wait until I carry out an advisory visit and, in many cases, the main cause of thatch is local over-watering by pop-ups caused by uneven coverage due to bad initial design.

At last, we seem to have achieved unanimity about the need to have four heads for nearly all greens. The inherent inefficiency of a three-head system, two forward, one back, often asymmetrically spaced, as well as the equally awful design of three half-circle heads, two side and one back, linked with one full circle approach sprinkler (you should never valve half and full circle heads together in this way) is now generally recognised.

I never do understand why clubs go blindly into pop-ups — probably the single largest investment, apart from a new car park, they will make outside the clubhouse without seeking impartial advice. It costs far less to get it right in the beginning. All too often, correction of major errors is put off for fear

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of offending those, still in office in the club, who, however well meaning, perpetrated the disaster in the first place.

The problems with bad pop-up systems show more clearly in the short term when watering is sensibly limited — as missed areas go bare and dry out. Over-watering masks these areas, but at the expense of thatched and waterlogged centres of greens.

Many courses — especially links and heathland — showed these dry areas all summer. This was due partly to the very cold, late spring, and the sensible decision to delay the start of watering. Partly, it was due to minimal irrigation levels failing to penetrate these already too dry areas — with water running off into low and already wet enough hollows. In some cases, there were complicating factors, such as the mycelium of dead or dying fairy rings waterproofing soil.

In all such cases, the answer is to get on top of the problem early by hand spiking and watering in detergent solutions regularly. Half-hearted applications are useless — you must keep it up until permeability has been restored. All too often, the problem was exacerbated by a reluctance to intensively aerate greens in dry weather "because the slits opened." With an efficient

pop-up system, there is no such thing as drought conditions — but uneven distribution with a badly designed system left, in some cases, no alternative to reverting to hand (hand-held hoses or sprinklers) watering.

In passing, I must mention the story (all my stories are true, even if to save blushes they are often anonymous) of the club with such a bad system that I had advised augmenting the pop-ups by hand watering to catch the missed areas on the perimeters. Passing by, I noticed the pop-ups operating in daytime. I called in and was astonished to see a greenkeeper sitting by the valve hydrant, operating the pop-ups manually. According to him, this was hand watering!

Aggravated

Dry patches on greens are a serious problem, linked, I agree, with limited watering, but often aggravated by the weather conditions. If the problem is not tackled with extreme vigour and enthusiasm as soon as it appears, it will not only progressively get much worse, but will be much more difficult to cure. Of course, when the water supply fails, even for a few weeks as did happen, a crisis occurs, but often dry spots are

aggravated by fairy rings.

This is one reason why I am an enthusiastic supporter of May & Baker's new fairy ring 'cure' Ringmaster. While there have been some disappointing results, these have nearly all been linked with dry soil conditions, which militate against dispersal of the fungicide and wetting agents through the soil. But there have been far more dramatic improvements — and it is well worth the money, especially in contrast to the costs (not to mention the disturbance) of digging them out, even if this were feasible. I think we shall still need to dig out old, well-established Type 1 Marasmius rings — if only to save time.

The difficulty with all seasonal greenkeeping problems is that they are seasonal! In other words, they tend to recover when the weather changes and the wet autumn — the wettest October since records were kept — has masked these dry areas. But, to the discerning eye, they can be detected and it is a salutary experience to dig into what looks to the uninitiated a perfectly satisfactory area of a green to find it dust dry an inch or less below the surface, despite this autumn's torrential rain. Aeration and detergents are still needed — all winter if necessary.

The wet autumn brought its crop of

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Jim Arthur Continued . . .

fungal problems and also stimulated earthworm activity. I am still surprised to find that quite a sizeable 'let's be kind to earthworms' lobby still exists. I would have thought even the newest member of a green committee or unversed agricultural college lecturer would have realised that you cannot possibly maintain fine turf in the presence of casting earthworms, if only because of the resultant muddy, uneven surfaces and associated weed invasion. Fewer still realise that it is the raising of soil fertility that is perhaps a worse problem than the worm casts.

Generally, there were less cases this year of agricultural advice to lime or slag fairways or greens, but a few cropped up in the year. With more universal acceptance (including some of the more enlightened fertiliser companies) of the need for low phosphate levels if fine grasses are to dominate, there is less over-feeding, even though in some cases I think the lower costs of this philosophy may attract converts — on both sides of the Atlantic!

It annoys me when I see so many courses each year which I start to advise, to find how they have destroyed, hopefully not irreversibly, their best assets, e.g. fine, wiry fairways, by senseless manurial treatment and to see soggy, thatchy bogs of greens contrasting so sadly with unspoilt fine-textured surrounds and to estimate just what this has cost the club to achieve — let alone how much more it is going to cost to put it right. The bill for wormkiller should by rights be presented to the person whose agricultural advice created the problem which resulted in this high remedial cost.

A side effect of so much worm casting this autumn has been a phenomenal amount of mole activity. One mole can build many hills — and control needs to start with the first disturbance.

Milestone

The year will, I think, be regarded as a milestone in greenkeeping history for other reasons than the weather. Perhaps the most significant development on the advisory side has been the change of direction at Bingley under Dr Peter Hayes. Some of the worst heresies have been stopped and there is already a great deal more unanimity of advice, which must be good for greenkeeping at all levels.

Time will prove all things, but I welcome the getting together of all concerned in advising golf clubs — even

if it would be unrealistic to expect complete unanimity on all aspects!

Another major change, this time not within an organisation, is the break-away of the English and International Golf Greenkeepers' Association from the BGGA. I welcome this development, if only because they have done more in a few weeks than the original organisation had done in years, towards the target for which I have aimed over the past decade or more, namely the promotion of a more professional standing and in the recognition of greenkeeping as a skilled and qualified profession; the furtherance of sensible greenkeeper education and the raising of standards of not only pay but accommodation for greenkeepers, with recognition of qualifications.

My approaches to the BGGA on such matters have been rebuffed. Such help that I have tried to give by way of lectures to sections is never acknowledged by the hierarchy. Approaches at all levels on the subject of greenkeeper training schemes lead nowhere — stony silence and disbelief, coupled with a rigid acceptance that a horticulturally based and biased City & Guilds syllabus is to be regarded in the same light as the tablets Moses brought down from the mountain.

My criticisms of this syllabus are manifold. Primarily, it is so vague that it is capable of diametrically opposite interpretation. To quote one example: 'Explain the advantage (and disadvantages) of nitrochalk, limestone and basic slag for turf use,' which gives no indication that they have no advantages, and can cause disasters on golf courses. 'Explain why it is convenient and expeditious to use compound fertilisers in turf management' fails to understand that it is recognised by all, save those with vested interests, that it is these very same inorganic NPK fertilisers that have turned bent/fescue greens into annual meadow grass ones.

The BGGA, its advisers and those in charge of reorganisation of greenkeeper training, get no marks at all for trying and not much more for methods and a minus mark for results.

Equally, it is not just the syllabus that is wrong — capable as it is of almost infinite (mis)interpretation by varying levels of experience in lecturers, but the basis — viz. day release, which is doomed to failure because it also implies a fragmented and infinitely variable basis for training. From the start, I pleaded for centralisation and a sensible syllabus. Talks with EIGGA are already starting to bear fruit.

It is, of course, vital that we not only all pull in the same direction, but are

seen to be pulling in the same direction. At least, while it may be premature to start counting the positives, we seem at least to have made a start in eliminating the negatives!

Other encouraging aspects of greater unanimity are afforded by such trade organisations as the British Turf Irrigation Association, which has drawn up standards and specifications, as yet on broad lines only, so that its customers get not only a system that is designed to modern standards and with old errors forbidden, but protection, as deficiencies in design now have to be put right at no charge (after impartial investigation). This stops the old problem whereby so often the cheapest tender was successful and sometimes was cheapest because it had least material content, and then when cover was inadequate the client was told in effect 'you get what you pay for.'

Performance

The answer must lie in competing firms all tendering for basically the same performance standards and golf clubs, if they want protection, going only to members of the BTIA for quotations.

All things considered — and despite memories of too many advisory visits with water dripping down my neck and later trying to read nearly illegible rain-soaked notes — I feel 1982 may have been a really good year for greenkeepers, if not for courses. There is naturally no room for complacency, and many golf clubs are still managed on systems that would bankrupt any industrial concern inside the year, but at least there is increasing recognition of the status and professional standing of greenkeepers, reflected perhaps in enhanced salary scales and better mechanisation and accommodation on an increasing number of courses. This can only come from a combination of better training (including refresher courses for top men) and a higher opinion of the value of the job on both sides of the fence. It can never be achieved by laying down arbitrary salary scales which have not been negotiated with employers.

I find the one sorry aspect of 1982 is that some greenkeepers are still hostile to my existence and fail to realise that few have done more to put their profession on a better standing, or to achieve just recognition for their efforts. I should not be surprised, because too many members blame the greenkeeper or the adviser when course conditions are less than perfect, but when the course is in top order, it is, of course, all due to favourable weather!

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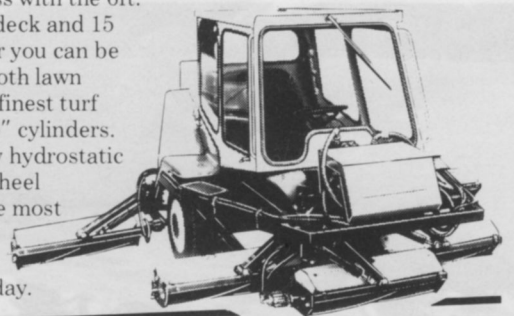
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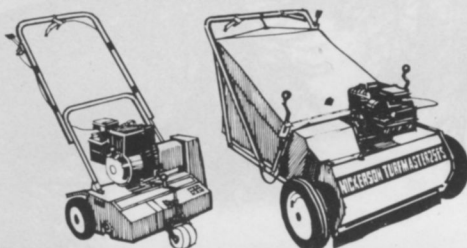


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Poor drainage is still a problem

Caroline Ward of The Sports Turf Research Institute analyses the findings of a questionnaire sent to some 500 courses in England, Scotland and Wales.

Poor drainage of golf greens and its solution is a topic that has been discussed at length. But to what extent is poor drainage on courses a problem? How serious is it? What do clubs do to combat the problem? The replies to a recent survey by the STRI (under contract to the Sports Council and DOE) show that a large percentage of clubs suffer from drainage problems on both greens and fairways and that much of the work carried out to solve the problem has not been successful.

The findings of the survey suggest that there are large differences between golf courses. Nearly 20 per cent of courses considered they had no drainage problems, while just under 5 per cent had a problem on every green. Altogether, almost a third of all greens and fairways were affected and ten per cent of greens were considered to have major drainage problems. If a major problem is assumed to be one requiring immediate attention, then over half the clubs replying needed to undertake drainage work in the near future. Although nearly 40 per cent of the clubs concerned admitted some difficulties with the drainage of tees, only three per cent of tees were declared to present major problems.

Wet conditions caused over two thirds of the clubs to close at some stage during 1981 and nearly a fifth were closed for over two weeks. In 1981, the average 18-hole course had 5.5 greens, 4.3 fairways and 2 tees with drainage problems and was closed for nine days due to wet conditions. Although there is no such place as the 'average' course — it is calculated from such wide variations — it is, nevertheless, clear that

poor drainage is, in most places, a sizeable and serious problem.

What Is Going Wrong?

What causes poor drainage on golf greens? Many were constructed when the use of courses was well below the present average of 32,300 rounds per year. The tramp of many feet causes damage to the structure of the soil, which becomes compacted, especially in wet conditions. The increased winter use of the course, together with the increased number of rounds played, means that greens, once perfectly satisfactory, are becoming compacted. Since water infiltrates into compacted soil only slowly, rainfall tends to remain on the surface of the green and in the upper areas of the soil giving soft, spongy characteristics of poorly-drained greens. The accumulation of thatch (fibre) on golf greens can also be a major factor in poor surface drainage.

Even when pipes are present, water may not be able to reach them quickly enough. To solve the problem provision must be made to ensure that water can reach pipes below the soil surface. Where the soil is not naturally sandy,



No, it's not the tide coming in, but a flooded bunker.

this may be achieved by adding large quantities, often over 75 per cent, of a suitable sand to create a medium that is permeable even when compacted. A suitable sand is one that has been found to have a particle size between 0.125 and 0.5 mm and has been tested by laboratory methods.

A green may be redeveloped, with sand and soil, mixed off-site, put down on a contoured base, with possibly a drainage carpet or the soil may be ameliorated with sand mixed into the soil on-site. In either case, the proportion of sand to soil and the type of sand used must be correct or unsatisfactory results will occur. A correct mix can only be achieved with the aid of extensive laboratory tests.

What Has Been Done?

The questionnaire asked for details of the types of drainage scheme carried out in the last three years. A third of all drainage installed consisted of pipes alone and almost as many involved the use of catchwater drains only. Although it is important to ensure that extraneous water does not enter the green area, the use of a catchwater drain alone is rarely sufficient to ensure a dry green. Over a third of schemes involving catchwaters have been unsuccessful.

Several clubs had tried some type of soil amelioration, with 32 per cent of all schemes being either total reconstruction of the green or on-site amelioration. The former was successful in over 80 per cent of the cases, but soil amelioration was far less successful, being the method with the lowest success rate. The mix achieved was probably frequently incorrect.

Overall, the success rate for the schemes installed was about 70 per cent. Of the unsuccessful schemes, failure was probably due to the poor level of success with catchwaters and soil amelioration.

Since most schemes were installed by the clubs' own manpower, this represents a considerable waste of money and labour. It also means continued disruption and the development of an attitude that further drainage is not worthwhile. Much of the failure can be attributed to the adoption of inadequate techniques which, although cheaper initially, ultimately prove more expensive.

What of the Future?

Although in the last three years nearly 70 per cent of the clubs had carried out drainage on their greens and 62 per cent on their fairways, the rate of improvement is slow and becoming slower. The only area where in three years' time the problem is likely to be significantly reduced is on tees. Clubs predicted that most tees with major problems would have been treated by 1984, leaving only about 7 per cent of tees with problems.

The situation is not so hopeful elsewhere on the course. It is predicted that only between 25 and 30 per cent of poorly-drained greens and fairways will have been drained by 1984, leaving 22 per cent of greens and 17 per cent of fairways with drainage problems. Moreover, the situation may be worse than this if increased use results in more courses developing problem areas.

It is tempting to claim that this failure to meet the challenge, and to drain these poor areas, is due to clubs' financial difficulties, but it is not the full story. The low success rate for schemes undertaken has contributed. Good drainage is essential for good playing conditions and, with the golf season now continuous throughout the year, improvements to drainage are a necessity on most courses. Good quality drainage is expensive to install, but the techniques are now proven and the current successes can be improved.

It is important, however, that expert advice is taken on the type of scheme to be used and, where appropriate, this should be backed up by laboratory tests. Green committees must recognise the need for total commitment to a drainage project, so the best type of scheme is chosen — not the cheapest. It is only in this way that the success rate of schemes will be increased and the figure of 80 per cent of clubs with drainage problems reduced.

In My Opinion Continued...

likely it is the golfer who objects to having to go through the inevitable interim period. During this phase, conditions will often worsen and we are told Jim has failed! How stupid and unfair.

I realise there is no one who needs my advocacy less and will be more annoyed by it. Bad luck, Jim, but it is the ultimate absurdity.

I think the change has come in two ways. First, we must all try, by every means, to educate the golfer to realise what kind of course is possible, given the season and environment. (Getting *Greenkeeper* into the clubhouse would be a good start.)

Second, younger greenkeepers must seek to become the super greenkeepers we so desperately need.

And everyone involved must start to say what they are thinking. Why not express your views in the form of a reader's letter to *Greenkeeper*? The magazine won't publish your letters unless you grant permission, but it will ensure all opinions are aired.

Finally, there is a new association, there are new opportunities. This is a time of change — be part of it!

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Notebook

The Fifth British Turfgrass Symposium and International Greenkeepers' Golf Tournament

When greenkeepers get together from many parts of the world to discuss the complexities of modern golf course management it may be found, on comparing notes, that in spite of the differences of language, weather, climate and a host of other factors, they have much in common. Many of their problems have a familiar similarity, writes *Greenkeeper's correspondent John Campbell.*

A recent occasion for such an international gathering was the Fifth British Turfgrass Symposium at Ransomes' Conference Hall, Ipswich, under the auspices of the British Golf Greenkeepers' Association. Over 150 attended and delegates included officials and members of the Golf Course Superintendents' Association of America, Canadian Golf Course Superintendents' Association, European Greenkeepers' Association, Scottish and International Golf Greenkeepers' Association and the British Golf Greenkeepers' Association.

Golf course architect Martin Hawtree delivered an interesting and well-researched paper on aspects of golf course design. He said the game of golf had been influenced by early architects and Scot Donald Ross became famous as a designer of courses in the US — among the best examples of his work is Pinehurst. Some of the best courses in Britain were designed by architects who limited their work — Herbert Fowler, Walton Heath; J. F. Abercromby, Addington; A.C.M. Croome, Liphook were examples. These eminent designers attributed their success to teamwork and good liaison between architect, constructor and greenkeeper.

In course design, Mr. Hawtree added, there are three major considerations that form the basis of good design: fairness, beauty and easy maintenance, which form the basic framework for architectural judgement and no course can be a lasting success unless all three are embodied in the design.

Dr Peter Hayes, director of the Sports Turf Research Institute, Bingley, discussed some of the history of research and the work of the former Board of Greenkeeping Research, which was started in 1929 by the then director R.B. Dawson. Much of the early scientific investigation into suitable grasses, fertiliser usage and weed control contributed substantially to raising the standards of greenkeeping in the British Isles.

New varieties of grass species are being introduced for fine turf by plant breeders throughout the world and an important part of the institute's work involves the testing and evaluation of new cultivars to determine their suitability for fine turf. The early work on the incorporation of organic fertilisers, such as dried blood and hoof and horn meal and now the introduction of slow release fertilisers, was evaluated. The results of a survey carried out by the STRI recently, demonstrated that lack of drainage is the biggest problem on many golf courses in the UK, Dr Hayes concluded.

Brian Richardson, regional development manager of May & Baker, explained in his address how fungal disease affects substantial reductions in turfgrass quality each year. The effects of fungal infection can take a heavy toll on the sward and usually results in weed infestation, loss of turfgrass cover and an unsightly appearance. The types of



Winners of the Ransomes Challenge Trophy, Canada on the 1st tee after being greeted by Piper Alan Ronaldson. Left to right: Lockie Shaw, Calgary Golf & Country Club; Doug Meyer, Cedarbrook G & CC; Bert Richold (referee), Ipswich GC; Steve Miller, Burlington G & CC; Bob Heron, Mississauga G & CC and Tom Kenyon (team manager).

injury caused by disease-producing fungi are characteristic for each organism. The size, shape, or colour of the scars produced in the turf aid their identification.

Most diseases can be effectively controlled provided application of the right fungicide is timely and environmental conditions are not too unfavourable for the turfgrass in use. Fungicides are sometimes applied as a preventive measure, or after the outbreak of fungal disease when correct diagnosis will aid curative treatment.

Mr Richardson added that the chemical control of weeds, or groups of weeds, can now be achieved by the experienced greenkeeper, who must identify the infestation accurately so he may select the right herbicide to attain the best results without injuring the grass or other useful plants in the area. So much depends on a variety of factors, such as weed growth stages, condition and function of the turf and the total area to be treated in relation to cost.

May & Baker's policy of developing specialised chemicals for the amenity and industrial market has resulted in the company producing five new major products. Ringmaster is a new fungicide for fairy ring control which, along with Clearway, the residual herbicide, was launched in spring. Clout and Supertox are May & Baker's new selective weed-killers, while Rovral Turf is its latest fungicide. Spasor is another product for total weed control.

Stephen Cadanelli of the GCSAA dealt with the subject of education for American golf course superintendents when he reviewed past, present and future progress in the educational system. In the early days, the educational goals were unclear and ill-defined and did not take into account, or failed to understand, membership needs and the trends of a changing industry.

A new educational format was necessary to equip the superintendent to deal with the change. Economics were

Notebook

bringing about more critical self analysis; maintenance costs were spiralling; water shortages were being experienced by golf clubs; pesticide regulations were increasing and property taxes were rising rapidly, he said. These many changes were forcing critical reviews of the game and future objectives and it was decided there must be a long-range educational strategy.

The educational programme had to represent different degrees of opinion and allow for individual decisions on the depths of study. It had to recognise the need for outside consultation and recommendations, and establish close links with accredited universities. It also recognised the need to appoint an independent board to monitor the programme.

Certification was the first important step taken to upgrade the educational system and the long-range programme offers the opportunity for a regular re-certification process to every superintendent. Modern technology is rapidly increasing and audio-visual techniques and video systems will be a way of life for education in the future.

The annual conference and show still remains the showcase of the year with the equipment exhibition unchanged, but the educational format now assumes increased objectives by continuing as a forum for researchers, superintendents, etc. The conference is a showcase, too, for the education programme — teaching new systems and what and how to learn.

Mr Cadanelli closed by saying that while traditions still remain, the main objective is to raise the status of the superintendent by presenting him with the opportunity, through education, to develop his full potential in a highly specialised occupation.

The History and Development of International Golf was the title of a paper given by David Talbot — professional at Royal Mid Surrey Golf Club. The standards of maintenance demanded for international golf tournaments is high and golf professionals expect a well-manicured and immaculately-groomed golf course to test their skills, David said. They travel the world and compete on courses prepared to perfection for the special occasion, such as the US Masters at Augusta. Golf is an international sport and the preparation of the arena requires skilled men with the experience and technical ability to present the kind of course that will satisfy the demands of all kinds of player, he acknowledged.

Ipswich (Purdis Heath) made a good venue for the International Greenkeepers' Tournament. It is a delightful

heathland course with many fine holes and a classical style of bunkering that compels the player to think about each shot.

David Jones and his staff deserve a well-earned pat on the back, for they presented an immaculately groomed course worthy of the occasion in spite of a lot of rain prior to the event.

A total of nine teams took part — all the home countries were represented and there were also teams from Europe, Belgium, Canada, the United States and the Republic of Ireland. Each team consisted of three players and a reserve. The competition was over 36 holes under Stableford play.

One of the highlights was the Scottish team walking proudly on to the 1st tee to the strains of All The Blue Bonnets Are Over The Border, played by Piper Alan Ronaldson who saw them down the fairway to Scotland The Brave. Alan has a proud record in this event, for he has piped on every Scottish team since the inaugural competition in 1973.

The Canadians finished first with 85 points, three more than the holders Belgium. Team positions were: Canada, 85 points; Belgium, 82; Republic of Ireland, 81; Europe, 80; England, 79; Scotland, 76; United States, 76; Wales, 73; Northern Ireland, 72.

On the final evening, Ransomes invited the competing teams and guests to a splendid banquet. After the meal, Piper Alan Ronaldson entertained the company in true Highland fashion with some stirring tunes on the bagpipes.



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Vintage Corner

Two collectors of vintage lawnmowers took a week's holiday to show their collections at the IOG exhibition. Andrew Hall, 23, a groundsman with Sheffield Corporation and Michael Duck, 32, a lorry driver from Somerset demonstrated mowers from their collections, which made up the majority of a

fascinating display by Ransomes.

Although none of the 29 machines on display was less than 47 years old, some visitors remembered using models similar to one or two of the later versions! The oldest mower was made in 1840 and there were eight on display made before the turn of the century.



Andrew Hall (left) with the 1920 Ransomes 18in Mk II Motor Mower he found in a Yorkshire scrapyards three years ago and for which he paid £6. The 24in Ransomes Pony Mower owned by Michael Duck was made in 1890 and cost him £20. He found it derelict a year ago in an orchard near Bedford.

Joint Effort

The IOG exhibition was chosen by Ransomes UK dealers to present the company with a silver salver commemorating 150 years of grass machinery manufacture.

Ralph Bird of R. S. Bird made the presentation on behalf of the dealers and congratulated Ransomes on its anniversary. "No company in the world

has approached this record," he said.

In reply, Ransomes' managing director Bob Dodsworth, spoke of the importance Ransomes placed on a good working relationship with dealers.

- R. S. Bird has held the Ransomes franchise for over 50 years.



Left to right: Bob Dodsworth, Ransomes; Freddie Salisbury, Kingston House Mowers; Ralph Bird, R. S. Bird, and Guy Catchpole, Ransomes.

A New Spot-Weeding Tool

The Weedwiper Mini, which wipes out problem weeds without damaging surrounding plants and without risk of spray drift, has been launched nationally.

From Hectaspan, the Weedwiper Mini is a carefully designed T-shaped clear PVC tube, with the long section acting as handle and reservoir for the herbicide, which is applied from a thick nylon rope-wick fixed along the short cross-piece. Once the wick becomes wet, as the herbicide soaks along its length, a wipe across the weeds ensures an efficient, safe kill.

Because of the application method, it is necessary to use a glyphosate-based



The Weedwiper Mini from Hectaspan.

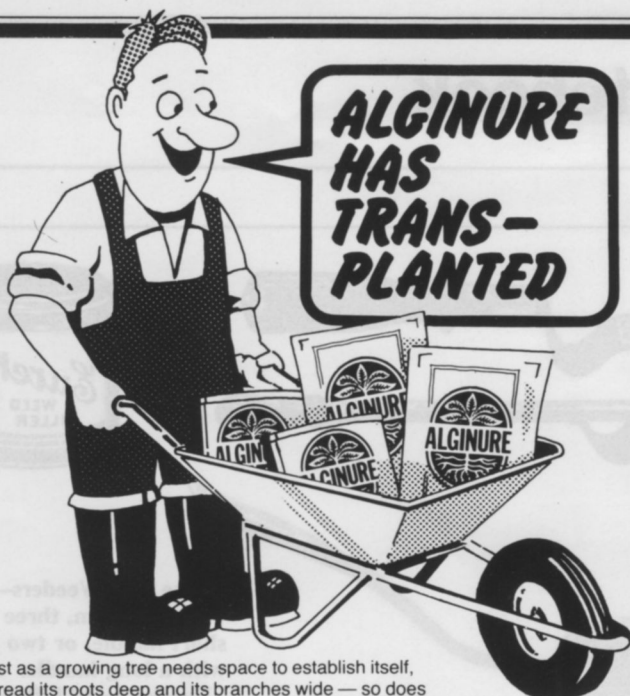
herbicide and Hectaspan, in association with Murphy Chemicals, recommends undiluted Tumbleweed.

The Weedwiper Mini is available from distributors or direct from Hectaspan, 62 London Street, Swaffham, Norfolk, priced £15 (plus VAT).

- Exclusive distributor for the amenity, local authority and industrial markets is May and Baker of Brentwood, Essex. In these situations, the new tool is used to apply May and Baker's chemical Spasor.

Toro And Tennis

Toro distributors British Overhead Irrigation of Shepperton, Middlesex, has installed automatic, pop-up irrigation at the All England Lawn Tennis and Croquet Club, Wimbledon.



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Notebook

Those Were The Days . . .

A 1928 catalogue for Stewart & Co—*Scottish Pioneers of Golf Turf*—was sent to *Greenkeeper* recently.

In those days, Stewart & Co was based at South Saint Andrew Street, Edinburgh.

The catalogue opened with details of Stewart's advisory service. Practical advice on seed sowing, fertilising, turf renovation, weeding, etc, was offered—either by correspondence or 'if desired, by a special visit of inspection, for which a small fee will be charged'.

For identification of grasses or weeds it was advised that 'samples, whether grass, weed, turf or soil should accompany letter enquiries'.

Compare these catalogue prices with 1983's—Stronghold mixture for greens and fairways cost from £11 per hundredweight, while the Stronghold mixture for teeing ground on inland courses was £9 5s (£9.25) and £10 for sandy links.

Seed 'reproducing accurately the famous Cumberland turf, most suitable for renovating existing bowling greens,'



TWO IMPORTANT FEATURES of the Famous STRONGHOLD MIXTURES.

Turf Free from Weeds.—The grass seeds in all our Stronghold mixtures are cleaned and re-cleaned until they are as free as possible from weed seeds. The appearance of weeds in any newly sown lawn or green is due to weed seeds in the soil.

Fine Turf versus Coarse Turf.—For all our Stronghold mixtures the seeds are selected from over twenty different varieties of the very finest dwarf turf-producing grasses and allied plants, and are accurately prescribed therefrom for all the varied soils and situations. Cheap mixtures produce coarse turf.

NO TRIAL NEEDED—RESULTS ASSURED.



Above left: Weeders—daisy, fork pattern, three prong, short handle, or two prongs with a long handle. Above: Eureka weed killed. Left: Turfing spade at 15s 6d (77½p).

went for £3 12s (£3.60) per bushel (28lb).

It was recommended that for a new bowling green, 40 yards by 40 yards, that one hundredweight of seed be sown.

The analysis of Stronghold grass manure then was 4½ per cent nitrogen equal to 5½ per cent ammonia; phosphates—water soluble 5 per cent, citric soluble and insoluble 25 per cent; potash 5 per cent. It cost £21 for a ton.

Ideal applications for the grass manure were: for putting greens—'when the seedbed is ready, spread the manure on the surface at a rate of two to three ounces per square yard. Afterwards, rake or fork it lightly into the soil. If possible, do not sow the grass seeds for a few days after the manure has been applied;' and for treating moss-infested turf, 'Stronghold manure should be applied alone at a rate of four ounces per square yard in wet or showery weather during autumn.

The catalogue included this testimonial on the value of Stronghold grass

manure from Mr W.M. Logan, greenkeeper at Gullane. "I would like to tell you what I think of your manure, both as a top-dresser and renovator. Stronghold manure has been used here for many years now and always with the best results. It is a grand safe manure for the greenkeeper and altogether its careful use keeps up a fine true-playing surface. It is the best manure ever I saw for eating out moss."

Stewart's own Stronghold fertiliser retailed at £5 10s (£5.50) for half a ton. Other artificial fertilisers, 'supplied at market prices,' were bone meal, basic slag, ground lime, kainit, nitrate of soda, sulphate of ammonia, guano (Peruvian), superphosphate, muriate of potash and leaf mould.

The company also produced its own worm destroyers, which were sold in tins from 8s (40p) for 7lb; lawn sand for destroying daisies, plantains and dandelions; and vaporite for killing wireworms and any other grubs in the soil. 'Sheep avoid greens dressed with vaporite,' it was claimed and all for 17s 6d (87½p) per hundredweight.

Cultivators, rakes, riddles, shovels, spades and weeders featured in the catalogue and not one of these items cost more than 10s (50p).

Along with motor, horse and hand lawnmowers, there was also provision for 'golf course requisites,' such as steel earth scoopes for horse labour at £4 12s 6d (£4.62½) and Sarel's spiked rollers from £6 7s 6d (£6.37½).

Weed killers carried such illustrious titles as Corry's Weed Death, Eureka Powder and Liquid.

Notebook

Now It's The Seventeen From Sisis

The new SISIS Hydromain Seventeen aroused much interest at the recent IOG exhibition. Developed from the Hydromain Fourteen, the Seventeen offers: a higher-rated, smooth-running engine; power steering with conventional steering wheel; single control pedal for automatic transmission providing positive forward/reverse drive; full lighting equipment; foot-operated hydraulic brakes and hand-brake; electric windscreen wipers and washers; optional steel safety-cab with safety glass and integral roll bar; steel doors

Latest STRI Seed Leaflet

The Sports Turf Research Institute gives up-to-date advice on the choice of turfgrass cultivars in its new publication *Turfgrass Seed 1983*. This year, publication has been assisted financially by members of the UK seed trade concerned with turfgrasses.

Turfgrass Seed 1983 is available, price

30p, from the Sports Turf Research Institute, Bingley West Yorkshire. Two earlier seed booklets, containing much still-valid information on mixtures and choice of species, are still available — *Turfgrass 1982* (40p) and *Turfgrass Seed, 1980* (50p). All prices include postage.

with safety glass and door-locks, and a roll-up, weather-proof rear visibility window and rear view mirror.

All these features have been incorporated without interfering with the

versatility of the Hydromain Fourteen and retaining the patented, weight-transfer system, which eliminates the need for additional implement weights.

New implements have also been developed, extending the already versatile Hydromain system to include turf-cutting, seeding and collecting and carting.

The new turf-cutting attachments can be purchased for about the same price as an average week's hire of a conventional, self-propelled single-purpose turf cutter.

A British-designed, medium-sized sweeper and collector is now available with a 4ft wide version of the long established and widely accepted SISIS Litamisa being introduced.

There is also a 4ft wide seeder and a hydraulically operated tipping trailer, making a total of 28 individual attachments offered with the Hydromain system.

SISIS has added a high pressure cleaner to its range. The cleaner is fully guarded for maximum safety, has a 'set and forget' automatic detergent dispenser and can be used outdoors and inside.

Designed for washing down tractors, mowers and other maintenance equipment after use and for de-greasing power units before overhaul, it can be used with or without detergent and can be supplied with a range of lances and nozzels for special applications.

Full details from: SISIS Equipment (Macclesfield), Shoresclough Works, Hulley Road, Macclesfield, Cheshire SK10 2LZ. Tel: 0625 26363.

Links For Links

Snap-Lock self-coloured plastic link chain from Initial Plastics is ideal for golf courses where temporary or semi-permanent barriers indicating restricted or 'no go' areas, such as ground under repair, are required.

Full details from: Initial Plastics, Park Road, High Barnet, Herts.



The Hydromain Seventeen with tipping trailer.



A general-purpose cleaner for washing down equipment.

Notebook

What The Customer Wants . . .

A new version of the Nickerson Turfmaster 84, which the makers claim incorporates every feature customers have ever demanded, was displayed at the IOG exhibition.

Despite the 84 being the most popular model in the range, Nickerson Turfmaster has taken account of customer comment during its years of production.

"We have a policy of constant product improvement and the changes made to the 84 are designed to protect its standing as a most popular model, particularly with golf clubs," managing director Matt Templeton said.

"It has not been a question of wholesale revision, but a carefully tailored package, designed to up-grade performance, durability and refinement."

There's a revised trim and a new design of optional cab gives greater protection for the operator from bad weather. It also provides easier access and achieves lower noise levels. Fully adjustable suspension seating and better upholstery have been incorporated.

Another major feature is improved manoeuvrability and a tighter turning circle without any danger of wheel scrub.

Greatly increased ground clearance, allowing the machine to mount nine-inch kerbs, an improved locking system for the cutting units during transportation, and a new type of cylinder bearing are other innovations, together with greater foot room and an easier-to-use wing mower engager.

The 84 retains its price of £5,460 and is still the only machine capable of traverse cutting up to 30° slopes —

making it ideal for the maintenance of steep banks, as well as formal and semi-formal areas.

Supplied with three fully floating mowing cylinders, the machine offers the flexibility of varying cutting widths from 30 inches to seven feet, as each of the three units can be raised and disengaged independently of the others.

The highly tempered steel mowing cylinders are available in three, five or seven-bladed versions.

The seven-bladed cylinder provides nearly 80 cuts per yard for a fine finish on regularly mown areas; the five-bladed cylinder gives 54 cuts per yard for a superior finish on grass up to eight inches high, while the three-bladed cylinder, giving 33 cuts per yard, will deal with grass up to a foot high.

All cylinder units are interchangeable in 30 minutes.

The Turfmaster 84 can cut up to three acres an hour in dry or wet conditions and its cutting speed is variable from one to six mph, with ten mph for travel between sites.

It is available with either a petrol, diesel or propane gas engine and has powerful eight-inch diameter hydraulic brakes and full highway specification.

Apart from the cab, other optional extras include Road Traffic Act lighting and a full range of turf maintenance equipment, such as aerators, rakes, rollers and sweepers.

Further information from: Graham Templeton, Nickerson Turfmaster, Gainsborough, Lincolnshire.

Cutting Remarks !

Nickerson Turfmaster is now manufacturing two rear-mounted flail mowers with cutting widths of 1.75m (5ft 9in) and 2.25m (7ft 5in). British-designed and built, each of these two big machines is easily mounted on a tractor three-point linkage and connected to the pto shaft.

The mechanical drive uses a V belt/gearbox arrangement to transmit the 30hp to the flail rotor, which carries six rows of flails. Height of cut is easily adjusted from zero to three inches, allowing rough cut or close crop as conditions require.

Landscape Link

Toro Irrigation has appointed Golf Landscapes Irrigation — a division of Golf Landscapes — its area distributors for the northern home counties and East Anglia.

Philip York, managing director of Toro, said: "Because of Golf Landscapes' vast experience in the turf industry and the Toro product range, we feel this appointment will provide tremendous advantages to existing and new customers."

Howard Swan, director of Golf Landscapes, replied: "For many years, we have considered that an irrigation division incorporated within our company would extend our business to provide a more complete construction and turf management service."

New 30hp Tractor From

A British-designed small tractor — known as the Nickerson Turfmaster 302 — is a rugged, versatile and full specification tractor.

With a list price of £6,023, the specification includes a 30hp diesel engine, quick-detach quiet cab (optional without cab), constant mesh gearbox with nine forward and three reverse speeds, differential lock, dry disc brakes, ploughlamp, foot/hand throttle, fully live hydraulics capable of lifting 1500lbs, tipping trailer kit, Cat 1 linkage, standard two-speed pto, full instrumentation and lighting and front end weight carrier.



The new Nickerson Turfmaster 84 with its full 7ft cut.

Buyers' Guide

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Hawtree & Son, 5, Oxford Street, Woodstock, Oxford, OX7 1TQ. Tel: Woodstock (0993) 811976

Hamilton Stutt & Co., 12, Bingham Avenue, Poole, Dorset, BH14 8NE. Tel: (0202) 708406.

Contact: J. Hamilton Stutt.

T. J. A. McAuley BSc FICE, 7, Donegal Square West, Belfast, N. Ireland, BT1 6JF. Tel: (0232) 26981.

BRITISH ASSOCIATION OF GOLF COURSE CONSTRUCTORS

Golf Landscapes Ltd., Ashwells Road, Bentley, Brentwood, Essex, CM15 9SR. Tel: 0277 73720.

Land Unit Construction Ltd., Folly Farm, Hanslope, Milton Keynes, Bucks. MK19 7BX. Tel: 0908 510414

Brian D. Pierson (Contractors) Ltd., 27, Vicarage Road, Verwood, Wimborne, Dorset, BH21 6DR. Tel: 0202 822372. **Southern Golf & Landscapes Ltd., 85, West Street, Warwick, Tel: 0926 492898.**

Chipman Ltd., Horsham, Sussex, RH12 2NR Tel: 0403 60341

CONSTRUCTION

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C. H. Binder Ltd., Moreton, Ongar, Essex, CM5 0HY. Tel: (027 783) 246 & 320. Contact: F. Binder.

A. W. Maskell & Sons Ltd., Stephenson Street, London, E16 4SA. Tel: 01-476-6321.

GOLF COURSE ACCESSORIES

Bridges Pennants, 68, Southchurch Avenue, Southend-on-Sea, Essex SS1 2RR. Tel: 0702 612344.

Contact: Mr. Elvin.

Supatuf Products Ltd., Oxney Road, Peterborough, PE1 5YZ. Tel: (0733) 68384.

H. Pattison & Co. Ltd., Stanmore Hill Works, Stanmore, Middlesex, HA7 3HD. Tel: 01-954 4171. Contact: Peter Dell.

GOLF COURSE AND BOWLING GREEN CONSULTANT

John Campbell, 121/123 High Street, Dovercourt, Harwich, Essex. Tel: 02555 7526.

GOLF COURSE CONSTRUCTION

J. S. Bishop & Co. Ltd., Bishop House, Bath Road, Taplow, Maidenhead, Berks, SL6 0NY.

GOLF COURSE CONSULTANTS

John Souter Esq., Cunningham Road, Stirling, Scotland. Tel: Stirling 2141.

GRASS CUTTING EQUIPMENT

Ransomes, Sims & Jefferies PLC., Nacton Works, Nacton Road, Ipswich, Suffolk, IP3 9QG. Tel: (0473) 712222. Contact: J. F. R. Wilson/T. J. Knight.

GRASS MAINTENANCE EQUIPMENT

Turners of Wheatley Ltd., 64, London Road, Wheatley, Oxfordshire, OX9 1YB. Tel: 08677-2349.

Professional Grass Machinery Ltd., Unit 5, Oaklands Industrial Estate, Cannock, Staffordshire, Tel: 05438 77866. Contact: Vicky Stevens.

GRASS SEED

Gerson Grass Seed, Grove Lane, Smethwick, Warley, West Midlands, B66 2SE. Tel: 021-558 3551. Contact: Frank Gerson.

Mommersteeg International, Station Road, Findon, Wellingborough, Northamptonshire. Tel: Wellingborough (0933) 680674. Contact: Michael Perkins.

Supatuf Products Ltd., Oxney Road, Peterborough, PE1 5YZ. Tel: Peterborough (0733) 68384.

Suttons Seeds Ltd., Hele Road, Torquay, Devon, TQ2 7QJ. Tel: (0803) 62011. Contact: R. W. Palin.

Hurst Gunson Cooper Taber Ltd., Avenue Road, Witham, Essex CM8 2DX. Tel: Witham (0376) 516600. Contact: Mr. K. Potter or Mr. C. Martin.

Carters Tested Seeds, Supatuf Products Ltd., Oxney Road, Peterborough, PE1 5YZ. Tel: (0733) 68384.

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J. S. Bishop & Co. Ltd., Bishop House, Bath Road, Taplow, Maidenhead, Berks, SL6 0NY.

IRRIGATION

Perrot Irrigation Ltd., 38, High Street, Rowhedge, Colchester, Essex, CO5 7ET. Tel: Colchester (0206) 867624.

IRRIGATION EQUIPMENT

British Overhead Irrigation Ltd., The Green, Upper Halliford, Shepperton, Middlesex, TW17 8RY. Tel: 09327 88301 Telex: 928767. Contact: Sales Department.

Sports Ground Irrigation, 'Hereward Lodge', Paget Road, Lubenham, Market Harborough, Leics. Tel: 0858 63153.

Toro Irrigation Limited Unit 7, Millstream Trading Estate, Ringwood, Hampshire BH24 3SD. Tel: Ringwood 6261.

Watermation Ltd., Monument Way E., Woking Surrey, GU21 5LY. Tel: Woking 70303 Telex: 859224.

LANDSCAPE CONTRACTORS

J. S. Bishop & Co. Ltd., Bishop House,

Bath Road, Taplow, Maidenhead, Berks SL6 0NY.

LIQUID ORGANIC FERTILISER

Farmura Ltd., Stone Hill, Egerton, Nr. Ashford, Kent. Tel: Egerton (023376) 241.

LITTER BINS

Green Brothers (Geebro) Ltd., (Lister Teak Products) Summerheath Road, Hailsham, East Sussex, BN27 3DT. Tel: (0323) 840771 Telex: 87676.

MOWERS

Brouwer P.T.O. Gang Mowers, (U.K. Concessionaires), Watmore's Turf, Redhouse Farm, Preston Brook, Warrington, Cheshire. Tel: Aston (Runcorn) 09286 336.

Morrison Precision Lawnmowers 16, Byward Street, London, EC3R 5BQ. Tel: 01-481 4851 Telex: 885476. Contact: Tim Chapman.

MOWERS - ROTARY

Lawnboy Farm Services Ltd., Railway Road, Downham Market, Norfolk. Main agents for Lawnboy Rotary Mowers. Contact: Nick Brett.

PLAQUES AND NAMEPLATES

Thos. A. Ingram & Co. Ltd., P.O. Box 305, Birmingham, B19 1BB. Tel: 021 554 4576. (brochure available)

POP-UP SPRINKLER SYSTEMS

RIS Cameron Irrigation Systems Ltd., Harwood Industrial Estate, Littlehampton, West Sussex, BN17 7BA. Tel: 09064 3985. Contact: Sports Division.

RANSOMES DISTRIBUTORS

Henton & Chattell Ltd., London Road, Nottingham. Tel: Nottingham 862161. Contact: Christopher Bryden.

W. Mountain & Son Ltd., Jackson Lane Works, Bank Avenue, Morley, Leeds, LS27 9JE. Tel: Morley (0532) 531201 Telex: 557067. Contact: A. C. Mountain.

SAND

George Garside (Sand) Ltd., 39 Hockliffe Street, Leighton Buzzard, Beds. Dry and Semi-dry sands for Golf Courses, Sports Greens & Grounds. Tel: 0525 372201. Contact: Mr. M. R. Adams

SEATS

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SEAWEED FERTILISERS

Seamag Agricultural Ltd., Foundry Lane, Chippenham, Wilts.

SEAWEED PRODUCTS

Algine Products Ltd., Leyswood House, Groombridge, Tunbridge Wells, Kent Tel: Groombridge (089276) 782. Contact: Bill Visser or Ben Simpson

SEMI-MATURE TREES

Eastcote Nurseries (Solihull) Ltd., Wood Lane, Barston, Solihull, West Midlands, B92 0JL. Tel: 06755 2033/4. Contact: Stephen or Michael Fisher.

SEMI-MATURE TREE PLANTING

Eastcote Nurseries (Solihull) Ltd., Wood Lane, Barston, Solihull, West Midlands, B92 0JL. Tel: 06755 2033/4. Contact: Stephen or Michael Fisher.

SEMI-MATURE TREE PLANTING (EQUIPMENT FOR HIRE)

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SOIL CONDITIONERS

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SPRAYING EQUIPMENT

Evers & Wall Ltd., Hardi Division, St. George's Way, Bermuda Industrial Estate, Nuneaton, CV10 7QT. Tel: Bondgate 020364 2054 Telex: 312426. Contact: Mr. W. Hayward.

TEE MATS

The Charles Lawrence Group Ltd., 153a Farndon Road, Newark, NG24 4SP. Tel: 0636 76218.

(Heavy Duty) Clan Marketing Company, Milton House, Loddington, Kettering, Northants NN14 1JZ. Tel: 0536 710328

TOP SOIL

Havering Landscape Supply Co Ltd., Havering House, Thornwood Common, Epping, Essex, CM16 6LT. Tel: Epping 76161. Contact: P. J. Furner.

TRACTORS

Lely Iseli Tractors, Crosshall Works, Gt. North Road, Eaton Ford, St. Neots, Huntingdon, Cambs. Tel: 0480 76971 Telex: 32523. Contact: C. Gregory.

TREES & SHRUBS

Eastcote Nurseries (Solihull) Ltd., Wood Lane, Barston, Solihull, West Midlands, B92 0JL. Tel: 06755 2033/4. Contact: Stephen or Michael Fisher.

Nottcutts Nurseries Ltd., Woodbridge, Suffolk, IP12 4AF. Tel: 03943 3344.

TREES TIES & TREE GUARDS

Green Brothers (Geebro) Ltd., (Rainbow Products), Summerheath Road, Hailsham, East Sussex, BN27 3DT. Tel: (0323) 840771 Telex: 87676.

TRENCHING MACHINES

A. F. Trenchers Ltd., Gosbeck Road, Colchester, Essex. CO2 9JS. Tel: 0206 44411. Contact: W. D. Baker.

TURF

Rolawn (Turf Growers) Ltd., Elvington, York, YO4 5AA. Tel: (0904) 85406.

Watmore's Turf, (Purpose Grown), Redhouse Farm, Preston Brook, Warrington, Cheshire, Tel: Aston (Runcorn) 09286 336.

TURF CARE PRODUCTS

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TURF DRESSING COMPOST

E. A. Goundrey & Son Ltd., The Nurseries, Duns Tew, Oxford, OX5 4JR. Tel: (0869) 40224.

TURF DRESSING & FERTILISER

Suttons Seeds Ltd., Hele Road, Torquay, Devon, TQ2 7QJ. Tel: (0803) 62011. Contact: R. W. Palin.

TURFACE SOIL AMENDMENT

Supatuf Products Ltd., Oxney Road, Peterborough, PE1 5YZ. Tel: (0733) 68384.

TURF (SPECIALITY)

Watmore's Turf, (Purpose Grown), Redhouse Farm, Preston Brook, Warrington, Cheshire, Tel: Aston (Runcorn) 336.

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