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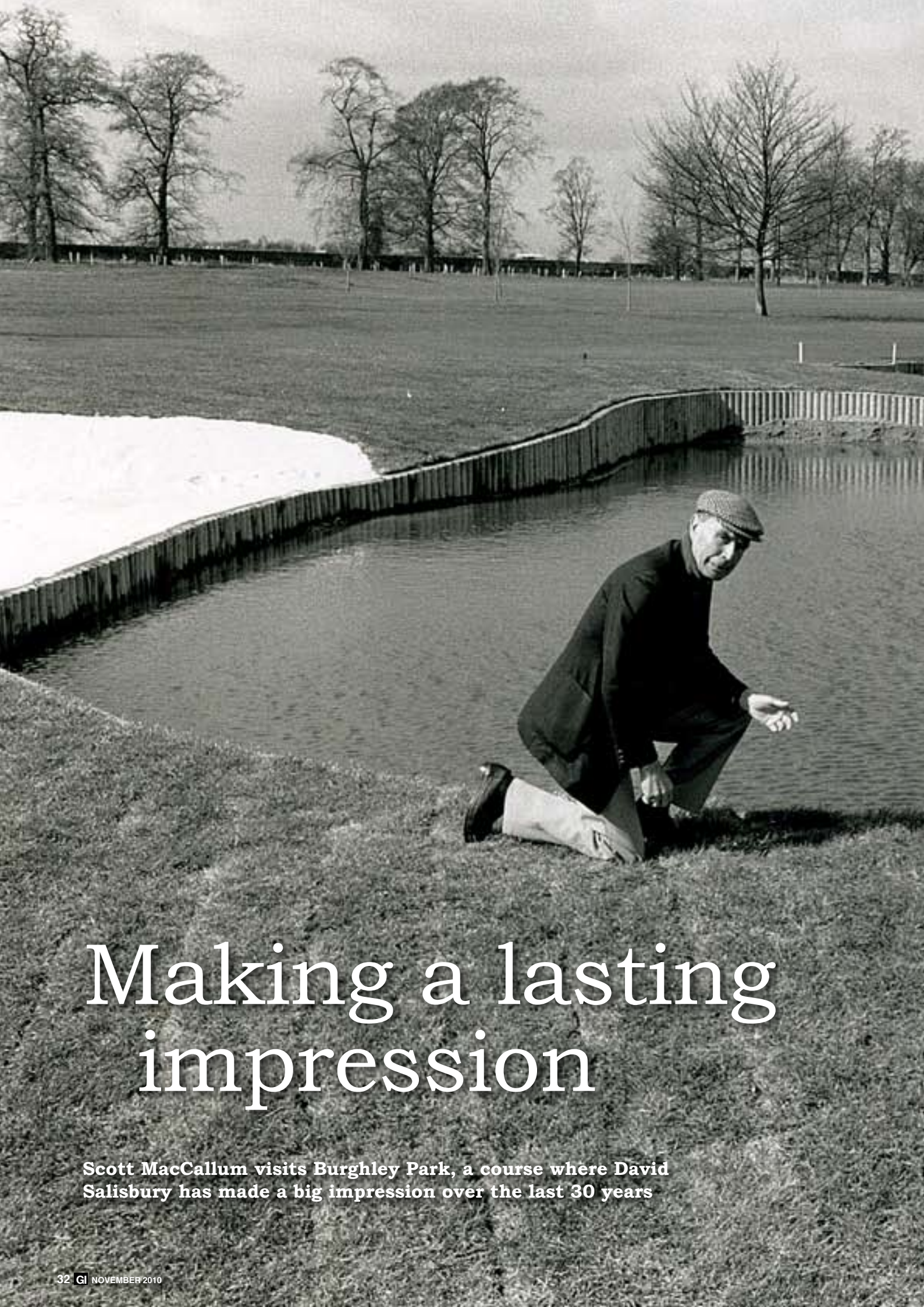
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Making a lasting impression

Scott MacCallum visits Burghley Park, a course where David Salisbury has made a big impression over the last 30 years



We are always told that first impressions count and that this is never more important than at an interview. However, it was a strange role reversal when David Salisbury turned up for his interview at Burghley Park Golf Club, in Stamford, 30 years ago.

David was dressed immaculately and looking every inch the prospective new Head Greenkeeper of the club. It was when he took a look at the golf course that his first impressions were not what he expected.

"When I drove through the gate my first thought was that some sheep had escaped from

a neighbouring field and were roaming across the course. The course was full of them," recalled David, not knowing that at that time, as part of the Burghley Estate, the golf course was used to graze sheep, and the shepherd lived in a lodge on the edge of the golf course.

Having first been interviewed by Club Chairman, Jimmy James, father of Mark, David then faced Secretary, Howard Mulligan, who concluded the meeting by taking him out onto the golf course itself.

"We walked to the 7th green, almost in a straight line from the clubhouse and Howard then

turned and said 'There you are, David. That's Burghley Park Golf Club.' I asked him if it was the front or back nine and he said it was the whole course," said David, who was at Burton Golf Club, in Derbyshire, at the time.

An aerial photograph, hanging in the clubhouse and taken in 1969, but showing a golf course not much different from the one David encountered 11 years later, confirms his memory. Other than a single copse of trees around the 3rd, 4th and 5th holes, the picture shows a triangular area containing 18 holes, no bunkers or any real discernible features whatsoever.

MAIN PHOTO: David in the early days at Burghley, and BELOW: as he is today, with his son





LEFT: How growing trees has improved the surrounding area of the pond from how it used to be (BELOW)

RIGHT PAGE: A current view of the old green which opens the article (PREVIOUS PAGE)



RIGHT: Before the club was renovated (ABOVE)



“Jimmy James said he wanted me to play golf over the course and even expected me to become a member of the club”

David Salisbury

However, three things encouraged David to feel positively about Burghley Park.

“One. Jimmy James said he wanted me to play golf over the course and even expected me to become a member of the club, which was totally different to what I’d been used to. Two. Walking to the 7th I had my head down looking at the grasses, which, perhaps because of the sheep, were excellent, bents and fescues. Three. My wife fell in love with Stamford as we drove through the town on the way to the interview.”

David was offered, and accepted, the job, and the following 30 years has seen the golf club transformed - although it does have to contend with some unusual turf maintenance issues on an annual basis brought about by being a caravan park during the Burghley Horse Trials.

The first significant step forward for the club was the permanent removal of the sheep, which finally happened in the mid 80s.

“The arrangement was that when we had a major competition the shepherd would take the sheep off the course, and remove the electric fencing a couple of days beforehand, but as we had a good relationship I gradually persuaded him to take them off earlier and earlier until it got to a week before. At this point

he accused me of wanting rid of the sheep for good. Which was true.

“As it turned out in the mid 80s Burghley had a major shake-up in its farming side and decided no longer to keep sheep or cattle.”

That opened the door to course developments although a degree of subterfuge was involved in the introduction of the club’s first bunkers.

“While the Horse Trials were on, and without discussing it with anyone, I decided to build a practice bunker on the putting green. The following Tuesday the Green Chairman called me and asked what we’d been up to and I told him. Half an hour later we were both standing beside it and he agreed that it looked good.

“I asked him if he thought we could do more of them on the golf course now that the sheep had gone and he said he reckoned it would be worth the risk. So we set about putting a bunker on each of the par-3s, moving quickly before Burghley Estate found out.”

They put in six bunkers before they were found out and received a rap on the wrist for doing it without permission. But the die had been cast and the precedent set.”

“They said that if we ever wanted to carry out work we had to tell them and since then whenever we have gone to them for permission to

BELOW: Horse trails take place next to the course





do something it hasn't been turned down."

The course now boasts 51 bunkers.

Tree planting was another part of the Burghley Park equation and with this David had an extra pair of hands he's been using ever since.

Gary Salisbury first worked at the club at the age of 5, when he joined his father for bunker raking duties at the weekend and by 8, in the mid to late 80s, he was on the club's books earning £5 per week.

"I was paid twice a year, at Christmas and in the summer, so I had money for Christmas presents and for my holidays," explained Gary, who was recently married.

Among the tasks he did carry out was tree planting and many of the established trees that now define the golf course were whips planted by young Master Salisbury.

The course now has a very established feel with holes well defined by the trees and bunkers and has benefited from the thought and attention to detail that David brought to the job including some ideas that were new to this country at the time.

An avid reader, and collector, of golf books, he studied a book illustrating the top 50 courses in the world of golf and identified that a common denominator was the careful presentation of the green

collars to include fringe rough, while most clubs in the UK were giving the same area a quick sweep with a gang mower.

"I was one of the first to use a dedicated triple to prepare these areas rather than a gang mower and the improvement in course presentation it brought was fantastic."

Another innovation introduced by David was trolley bans around the green, a traffic management tool that assisted in ensuring better quality playing surfaces.

"We employed white plastic stripes which we sunk into the ground indicating where trolleys should go and this removed some of the pressure around the edge of the green."

As we spoke the club was experiencing problems with the nasty combination of chafer grubs and badgers – the former having arrived in platoons of 200-300 per square metre and the latter having great fun scraping up the turf, often at a rate of 200 square yards a night to enjoy easy meals.

"The chafers like dry conditions, which we also want for the grasses, but we are trying to address the problem by removing the food source for the badgers by using Scotts Merit through the warmer months to eradicate them."

What marks Burghley Park out



as different, however, and offers up issues that would have many greenkeepers tearing out their hair is the Horse Trials which close the golf course for nine days, every year and which can cause some fearful damage to the course. With the course closed every September Burghley members pay a 50 week of the year membership rather than 52.

While they have been lucky with the weather most years 2008 was very much a grim exception and the problems it created were of the substantial nature.

The golf course is used as a car/caravan/mobile home park with

ABOVE: the consequences of badger damage and BELOW: chafer grubs





many “residents” having maintained the same pitch for many many years.

“Much of the damage traditionally came from children on their BMX bikes, bonfires in the trees and barbecues, but as children have got older they have become more respectful of their surroundings and been more careful – however when they start bringing their own children it will probably go back to where it was before and act like a cycle,” said David.

However, 2008 saw the Horse Trials surrounded by heavy rain, both before and during the event – one of the most prestigious on the equestrian calendar.

“The poor weather meant that many people didn’t arrive until the

“Everyone pulled together and we had to think about the situation from a business perspective and we had nine holes open for the members to play within 48 hours while we got on with making progress on the other nine.

“What we tried to do as the honest broker was to mitigate the loss factor and the damage factor. The other thing, which was critical, was from an agronomic perspective we only had a very short window to get work done. As the Horse Trials are close to the end of the season the growing season time behind them is not long.”

“We started on September 1 and the site had been cleared with all the work done by September 24. In that time we had got quotations, opened

“The back nine was basically a non-golfing area – ruts a foot deep and sludge a foot high across the fairways. Six greenkeepers stood there that morning and we could have all cried” David Salisbury

Friday and the greenkeeping team was pulling motor homes out of the mud to get them on to their pitches. After that it just rained and rained and rained,” recalled David.

When the team arrived to inspect the damage on the Monday morning following the Trials, despite the feeling of foreboding they all inevitably felt, no-one could have prepared them for what they saw.

“Basically the back nine was a non-golfing area – ruts a foot deep and sludge a foot high across the fairways. There were six greenkeepers standing there that Monday morning and we could have all cried.”

At this stage Club Manager, Stephen Last, came into his own and plotted the recovery plan, that was too large for the greenkeeping staff to handle on their own and was going to involve outside contractors.

“The first stage was to get our landlords and the Horse Trial people together to agree that ‘yes’ there was damage,” explained Stephen, as we sat in the committee room with David, Gary and the club’s Vice Captain, Dr Keith Duff, formerly Chief Scientist with English Nature, and who has just authored an R&A book on birdlife.

“That having been agreed we had to get three quotations from contractors for restoration,” explained Stephen.

a nine hole course, checked the specification with the STRI agronomists; selected the turf, managed and settled the initial claims with a third party,” said Stephen, who added that negotiations with the Burghley Estate and the Horse Trials continued after this period but were duly settled.

Ironically having laid the new turf, sourced by David from County Turf, and chosen because of its similarity to the fescue dominated turf that was there originally, they experienced a period of drought.

“It was an Indian Summer and we had to spend many man hours to keep the huge areas of turf alive. Some of them were 200 yards from the nearest watering point although we were lent a Hurdy Gurdy from the Horse Trial people, who were perhaps feeling a little guilty about the damage,” said Gary.

Since ‘08 the situation has been looked at and one of the main parking areas has been moved to another area of the golf course to spread the load. The last two Trials have also enjoyed better weather but the prospect of another wet September sends shivers down the spine of the greenkeeping staff.

However you get the idea that David would not want to be anywhere else. First impressions were one thing but David has certainly made a lasting impression at Burghley Park.



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A post pesticide prognosis for turf patients and carers

Dr Terry Mabbett continues his thesis on the future of pesticide

It's April 1st (All Fools Day) 2015 and you wake up to find the EU has banned the last remaining chemical used as a pesticide on professional turf.

Ferrous (iron) sulphate applied to turf for centuries to control moss can no longer be used for this purpose although you can still use ferrous sulphate as a fertiliser and buy the tablets from the chemist to boost your blood iron level.

Rooks and crows are watching in a re-run of the iconic 'Hitchcock Movie' [The Birds], ready to tear up your turf and devour this year's exceptionally heavy infestation of chafer grubs. Last year's autumn mists crept up early during the first week of September and unleashed a flood of Fusarium and anthracnose into the turf still stressed from summer drought.

The air [in September] was still full of dandelion parachutes from what had been the biggest country-wide infestation in living memory. Most survived the extra mild winter and are now healthy-looking dandelion rosettes spreading rapidly across the turf still threadbare from Fusarium and anthracnose infections. If this summer is a repeat of 2014, the hottest and driest on record, then it won't be long before the fairways are parched with huge

patches of drought resistant weeds taking over.

Those chemicals most sorely missed are herbicides and greenkeepers are now paying the price for others' excesses. There was always a much greater use of the same herbicides by farmers, while application to hard surfaces in the industrial sector caused fast heavy run-off of herbicide into water courses. And greenkeepers need these herbicides now more than ever before, after a series of hot dry summers to stop drought resistant turf weeds including white clover, bird's foot trefoil, yellow suckling clover, black medick, yarrow and now self-heal and cinquefoils taking over completely.

Your erstwhile 'chemical' rep, now something between a snake oil salesman and a witch doctor, has just pulled up behind the clubhouse in a green van and wearing a green jacket. Joking apart what will you do if virtually all chemical pesticides currently registered for use in managed turf disappear?

Looking back

Greenkeepers with turf 'in the blood' might recall what their grandfathers but that's not far enough back in time, because 'modern' turf





Once Himalayan balsam, the alien invasive weed shown here, gets a foothold it can only be 'shifted' by the use of chemical herbicides.

pesticides like hormone weedkillers (herbicides) were first used in the 1940's. The hormonal herbicide 2,4-D, a British discovery at Rothamsted Research Station in 1942 under the team leadership of Judah Hirsch Quastel, was first commercialised by a paint company in 1946. Not to be outdone another paint company in North America commercialised MCPA soon after.

There's not too many greenkeepers still around who can tell you what happened much before 1940. Perhaps that's because the very first turf pesticides developed just after the First World War, and used up until the Second World War and sometimes beyond, sounded like something left over from the Battle of the Somme. There was gas lime, a by-product from the manufacture of coal gas which smelled of moth balls (naphthalene) and rotten eggs (hydrogen sulphide) and used to control chafer grubs into at least the 1930's.

Biopesticides based on living organisms like friendly fungi, benign bacteria and non-naughty nematodes clearly require more exacting conditions and more time to work

And if that wasn't your particular poison then you could always consult Agatha Christie about 'arsenic and old lace' or 'sparkling cyanide' because both sodium cyanide and hydrocyanic acid were tried, tested and used at the time. Reason why initial commercialisation of hormonal weed-killers was carried out by paint companies was probably due their interest and expertise in arsenic-containing paints.

Looking forward

There's clearly no safe message or mileage in looking back chemically so the only option is to look forward biologically and culturally by homing in on all the good turf management practice developed and refined by generations of greenkeepers. The 'boffins' call this approach integrated turf management, best of all worlds (cultural, chemical and biological controls) used in combination, but not in a post pesticide world because there will be no chemicals left to integrate.

Professional turf is just what its name implies, an immaculate playing or leisure surface without bare patches, holes, bumps, weed growth

and discolouration, and when things do go wrong rapid remedial action is required. Whatever faults chemical pesticides may have they act and deliver quickly compared with biological pesticides. Biopesticides based on living organisms like friendly fungi, benign bacteria and non-naughty nematodes clearly require more exacting conditions (e.g. temperature, moisture and soil pH) and more time to work.

Turf is a perennial ecosystem and on face of things should respond to a balanced long term cultural care package without the use chemical pesticides, but will all the potentially destructive agents in turf, namely insect pests, fungal diseases and weeds, respond well enough. Answer is a qualified yes for fungal diseases and a definite no-no for insect pests and weeds.

Potential turf grass pathogens are always present in the thatch in a benign saprophytic mode, only changing up through the gears into

parasitism if conditions, including turf grass species and varieties, soil moisture and fertility, leaf surface wetness and atmospheric humidity, combine in the right way at the right time. All this can be monitored and manipulated by the greenkeeper to his/her advantage but insect pests and weeds arrive from the wider environment outside the golf course affording greenkeepers little if any control over the situation.

Turf diseases

Thatch which is the layer of dead, dying and decaying grass material at base of the sward is the source of most turf disease and its manipulation and management a key solution for disease management in the absence of chemical fungicides. Most mainstream fungal pathogens like *Microdochium nivale* (*Fusarium* patch) and *Colletotrichum graminicola* (anthracnose) are perpetually present in thatch as saprophytes feeding on dead grass material.

They gear up into parasitic mode in response to changing environmental conditions and turf stress, which commonly come together as late summer moves into autumn.

Thatch and root zone soil is also home for the wide range of antagonistic microbes both fungal and bacterial which compete with, consume or secrete natural chemicals to kill potential grass pathogens. Root zone microbes including mycorrhizal fungi recycle root exudates to form a physical barrier against grass root infection.

Thatch is a necessary evil that provides the cushion for turf as a playing and leisure surface. Secret of disease management is to maintain a dynamic thatch kept at a depth appropriate to turf type. A dynamic thatch ensures continual and fast recycling of nutrients for grass growth and health while avoiding high stress, especially during high traffic and wear periods. In addition it will lessen dependence on synthetic fertilizer.

Thatch degradation is accelerated and sustained using physical techniques to boost aeration while number and activity of thatch degrading microbes can be supplemented by inoculants and compost tea. Together with use

gamma HCH (lindane) and before approval of imidacloprid there was a gaping hole in the market and even bigger holes in turf.

Biopesticides based on entomopathogenic nematodes are available but being natural enemies they are by definition density dependent factors, dependent that is on the density of the insect pest host. The nematodes multiply gradually with rising numbers of chafer grubs then fall away as the insect pest population is controlled. As such they are not a fast control option. As biological control agents they generally require more exacting conditions than do chemical insecticides. For instance, ideal time for application is when the soil is already moist and soil temperature is within the 12-20°C range. They are clearly not the quickest and most appropriate option for golfing greens already being damaged by predators in late autumn and winter with an important tournament just weeks away

It is difficult to imagine professional turf with an acceptable level of weeds if the current arsenal of

Chafer grubs historically present the worst problem not least because in the period after withdrawal of gamma HCH (lindane) and before approval of imidacloprid there was a gaping hole in the market and even bigger holes in turf

of disease resistant grass species and varieties and taking measures against those conditions conducive to disease development, by for instance removing surface moisture and reducing shade in the case of Fusarium Patch, disease management in professional turf without use of chemical fungicides becomes a feasible option. That said blemish free surfaces and 'fast fixes' will no longer be an option.

Turf pests and weeds

UK turf gets off relatively lightly from insect pests (compared with North America). Chafer grubs (*Phyllopertha horticola*) and leatherjackets (*Tipula paludosa*) are the only two of any real consequence. Direct damage with severed roots causing loose dried out turf is bad enough, but collateral damage from corvids (rooks and crows) and badgers and foxes tearing up turf to get at the grubs can prove almost terminal. Chafer grubs historically present the worst problem not least because in the period after withdrawal of

approved herbicides is taken away. Damage to turf from disease and insect pests exacerbates weed problems by creating additional niches of bare ground for germinating weed seeds to exploit. Similarly, the disappearance of chemical wormicides would lead to greater worm cast problems and create even more ideal sites for weed seed germination.

Greenkeepers already face several dedicated turf weeds with little or no suitable chemical control available. Only a small number of selective herbicide actives provide one-off control of slender speedwell (*Veronica filiformis*) and there is essentially no selective herbicide for control of field woodrush (*Luzula campestris*).

Mycoherbicides which are biological control products based on fungal pathogens used to kill specific weed species are used elsewhere against woody weeds such as bramble (blackberry) in Australia. However, these highly specific mycoherbicides would be of little use to greenkeepers faced with anything up to a dozen completely different turf weed spe-



Dandelion (dente-de-lion) is already 'showing its teeth' in fine turf



Drought-stricken turf gives a free run to weeds like yarrow shown here



Worm casts and weeds will become two of the biggest problems in turf without the use of chemical pesticides

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