SOUTH WALES SECTION

RECENT Appointments: Colin Reilly recently took over at Pennard Golf Club. He was first assistant at Royal Birkdale before the trip to Wales. Huw Thomas took over from John Hopkins at Pontardawe Golf Club. He is a local lad who used to work for the council.

Another council worker who has taken over in the private sector is David Waters, who used to work for Newport Borough Council at Caerleon. (this is where I came from and since my leaving there has been four others left to join the private clubs). David has taken over at Pontnewydd Golf Club in Cwmbran.

Huw Morgan recently took over at Southerndown Golf Club due to the early retirement of John Hopkins due to illness. I wish John all the best for the future and his wife who he married in October, and I hope they will be very happy together in whatever they will be doing in the future.

I would pass on my best wishes to all the above in their new positions.

On Wednesday, April 11 we held our spring meeting at Wenvoe Castle Golf Club, where we were treated to some excellent golf and service from the indoor staff.

The weather was good with the rain staying away long enough for everyone to enjoy the day. There was a good turnout once again and I would like to thank all those who sent their deposits and hope that I will receive even more for the next competition.

The competition was a good event with the home greenkeeper using his local knowledge to good effect dropping only 15 shots to par in 27 holes.

Winner of the Cardiff Cup and a watch donated from the funds was Laurence Walter with a score of 99. Second was Les Hallett, who won a golf trolley with a score of 108. Third was London Williams with a score of 109, he won a bottle of whisky donated by Browns of Bristol.

Best gross was won by Mike Jones with a score of 120 and he won a bottle of whisky donated by Avoncrop of Bristol. A raffle was held to help swell the funds and I would thank everybody for buying their tickets.

Winner of a bottle of sherry donated by the administrator was Tony Millar. Winner of a hash set of overalls was Steven Evans, these were donated by the local Iseki dealer Mr Chris Hopkins. Winner of a bodywarmer donated by Peter Hampton was John Carter. Three golf balls were each won by Itwai Morris, Kirk Stevenson, Huw Morgan and Mike Norfolk. These were donated from the funds.

We would like to thank the committee and members of Wenvoe Castle for giving us courtesy for the day on the course and in the clubhouse. Thanks Tony and his staff for putting the course in such good condition considering the dry conditions so early in the season. Our gratitude also goes to the stewardess and her staff for looking after us throughout the day.

The 18 holes played in the afternoon was the section’s Iseki qualifier. And the following people will represent the section in the regional competition at Yeovil Golf Club on June 14. M. Jones, H. Morgan, J. Morris, J. Carter, P. Swain, L. Walter, M. Stokes, T. King, D. Jones, T. Garland, R. Kilker, L. Williams, L. Hallett, B. Price and M. Norfolk. Reserve T. Thompson.

G. Cox and N. Owens were disqualified because they had not paid their subscriptions for 1990. Therefore their places went to the reserves P. Swain and M. Norfolk.

PHILLIP SWAIN

SOUTH WEST SECTION

At a presentation at Long Ashton Golf Club staff party, Association Chairman Ivor Scoones is pictured, left, handing over gifts to Ray Burniston on behalf of club staff. Ray has left the Club after 18 years, latterly as managing secretary, to become Association secretary.


With many thanks to Monro’s, Browns, Avoncrop and Peter Hampton for the prizes.

The spring one day FEPA course had to be cancelled due to a clash of dates. Further days can be organised in the autumn, please advise numbers to me as soon as possible.

In the meantime I’ll look forward to welcoming you all to Lilley Brook on July 11 for the 18 hole summer tournament. (I expect we’ll be Verti Draining the greens or something). If you all promise to turn up. I’ll promise to leave the Verti Draining and top dressing until the next day (Lady Captains Day).

Finally condolences to all at Filton Golf Club on the sudden death of Andrew Wilson, deputy head greenkeeper, after a short illness. Our sympathy in particular to his widow Lisa.

PAUL WORSTER

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1. AERATION
Verti Drain hire/Twose Turf Conditioner & Robin Daggar - we are, at present running 4 Verti Drains (various sizes) and can offer tine sizes from 1/2" diameter by 12" long at 2 inch centres, up to 1" diameter by 16" long at 4 inch centres. Also available, Hollow tines. Therefore we can cater for any Verti Draining need such as Greens, Tees and Fairways, etc.

Twose - this machine operates by way of seven vibrating blades which are pulled through the ground in a similar fashion to small mole ploughs, therefore relieving compaction and improving surface drainage.

Robin Daggar - This very light and portable machine injects oxygen into the soil and around the roots.

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Wizz Wheel Trencher + Backfill sand/gravel hopper this is to be available on a weekly rate (min. hire 3 days) should you just require trenches excavated to be backfilled by yourselves, or, quotations can be submitted for complete sand slitting/drainage programmes including ‘Hitek’ stripdrain.

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Mobile: (0860) 838241. Fax: (0323) 411980

June 90
that we can progress.

secretary this month in the shape of Derek Walder of Reigate Heath who has taken over the hot seat from Mik Wells.

to find his way around the job over the hot seat from Mik Reigate Heath who has taken to a marvellous meal and saw people, of whom 125 sat down greenkeepers and greenkeepers for the fine region, as a token of all our appreciation of sterling work in the spring meeting was a great turn up, team up, and enjoy The winners of those

takes place at Sudbury on June 11 at 3.30 p.m. The cost is £12.50

v Scotland match is to be played at Hindhead on August 13. Captains are Clive Clogrod for England and Stuart Macmillon for Scotland.

also to Fewsters, Hayter, Patcorn, the local Iseki dealer etc. The winners of those

Correspondence was played at Hindhead on August 13.

These may be posted to me at: The Bungalow, Hankley Common Golf Club, Tilford Road, Tilford, Farnham, Surrey GU10 2DD. That's all for now, keep me posted of your news etc on 025 125 4287.


Thanks to Mr Barry Poole, the Publishing Director of the greenkeeping magazine for giving an update on how BIGGA is progressing and for presenting prizes.

Our thanks must go to George Bailey and his child 33 pts and A. Chaundry

results: Best gross, D. Baxter - Newbiggin G.C. 73. Best Nett: N. Parking - Hexham G.C 76-9 = 67. Ass. Cup, M. Cameron who takes a new post as Head Greenkeeper at Tenderton Golf Club in Kent. Also congratulations to Christopher Granestock who replaces Jim at Gryms Dyke as Head Greenkeeper. Talking of Gryms Dyke our spring meeting was held at the club on April 28, although the day was poorly attended, Phillips, who did play enjoyed themselves, and some good scores were recorded.

This was an Iseki regional qualifying event, and the final takes place at Sudbury on July 4. More news as it happens!

The next event on our golfing calendar is The Cresta Cup. There is no start sheet, so allowing the section use of their

We were surprised to find not only were preferred lies on fairways but in the semi rough! Apparently they always do this.

Thanks also to the greenkeeping staff for the fine condition of the course. We were surprised to find not only were preferred lies on fairways but in the semi rough! Apparently they always do this.

Towards Mr Barry Poole, the Publishing Director of the greenkeeping magazine for giving an update on how BIGGA is progressing and for presenting prizes.

Our thanks go to the sponsors: Stewart's, Ryton Gravel Co., Bield Short, and Turfcare Supplies. I shudder to think how we would survive without these four companies who help us, out immensely, and also to Fewsters, Hayter, Pat

Without saying too much, the committee of Alnmouth for the courtesy of use of course and condition of this course also to

LEADING SCORES


Well done to all the qualifiers and good luck at Sudbury in the South East region final.

Let's see a good contingent of our lads in the national final at Fulford later in the year. The
around the green

Cont. from Page 22

afternoon competition was a stableford and Chris Carpenter again came home ahead of the field with 40 points followed closely behind by David Clugstone and Chris Carpenter after the afternoon competition was a welcome them.

influx of new members and we don’t Jeff Fowker, Sandy Smith, Wanstead; Norman Steve Mullet, Sandy Lodge; Steve Godfrey, Hatfield & L

ingo, Lanbury Manor; Arthur Coward, Hanbury Manor; Durkley, Pinner Hill; N. Elstree; Mick Bath, Elstree; Stuart Green, Regents Park Golf School.

the start of each season. If anybody has something interesting to tell then phone me on 081 441 3216.

and no passes!

Our section chairman Graeme Patrick and myself, accompanied by our wives attended the international education conference at Egham. The lectures were varied, interesting and very well delivered making the three days fly by.

Our wives were given a very well planned tour of Windsor and London keeping them very content (house points scored). Many thanks to BIGGA from the wives.

COLIN SWINGLER

Cont. on Page 24

AYRSHIRE SECTION

It’s been all go this past few weeks with trying to fight the usual Ayrshire spring weather and the hordes of hackers digging their clubs out of the attic at the first hint of sunshine.

It’s very difficult to get the immediate perfect conditions every golfer seems to expect at the start of each season. I had a most enjoyable visit to London early in April for the BIGGA conference. The speakers really sparkled off some great discussions. It’s a pity the food didn’t quite match up, but I suppose we can’t have everything. After seeing the drought conditions down there, I’m not sure if I prefer too much rain or not enough. It would be nice to be able to share it.

Talking about London, sincere congratulations to Bobby Bennett from the Glasgow Golf Club who has landed the task of looking after Sunnyside in the footsteps of Jack McMillan. Knowing Bobby, I’m sure he will make a great job of it.

Our spring outing was a great success. It makes a change to hear complaints of too much heat, rather than cold and rain but temperatures were up around 80°F all day giving rise to the dilemma of whether to pour the evening beer over the throat or over the poor feet.

Our thanks go to Kyle and Carrick District Council for giving the use of their Lochgreen and Darley courses for the outing, both of which were in excellent condition due to the efforts of Head Greenkeeper Brian Finlayson and assistants Billy Fletcher and Pat Power.

In fact Brian and Billy both suffered for their efforts, Billy having to retire with sunstroke after eight holes in the afternoon, and Brian retiring at 12.45 a.m. for some reason he can’t quite remember.

Just one last thing before the outing results, please, please can I have some news from around the area to give me some help with this column.

It is to keep you all informed, and if I don’t know, I can’t write it here. Telephone 0292 70929 any lunchtime or late evening.

Outing results: Three Man Scramble on Darley: Par 71 6450 yds Chic White (1), Kirk Campbell (4), Billy Fletcher (14). 57 Gross (this is ‘14’ under par, who says hackers can’t play golf).

Singles on Lochgreen: Par 73 - 7050 yards. Scratch - Chich White, Largs Kelburn 77. 1st Class 1st Duncan Gray, 2nd Alan Forest, Western Gailes, 79-4-75.


JIM WYLIE

EAST ANGLIAN SECTION

UR first tournament of the ’90’s was at Felixstowe Ferry on April 10.

A dry but cloudy day saw 40+ going in roughly the same direction.

George Newton had the course in its usual pristine condition. It was the first round of the Iseki Tournament but as there wasn’t a representative of the company to be found we played for the Rushbrook Salver and guess who won it? Hot Toddy Huddleston, 35pts and no passes!

First and second in the 0-9 section were Alan Carter and Peter Howard, 34 and 33 pts.

First and second in the 10-18 section were Dave Wells and Sam Sylvester 35 and 33 pts. Mr B. Millhard with 34 pts won the guest prize.

I have a list of reserves for the tournament.


Our thanks to Mr Jim Cowan the club captain and members of Felixstowe Ferry for allowing us courtesy of the course and making it a memorable day. Thanks also to our ‘trade members for valued support and prizes they were as follows: Rigby Taylor, Patti
tson, SISIS, Town and Country, Rushbrook’s, Toro and Colliers.

MICK LATHROPE

EAST OF ENGLAND SECTION

UR first meeting of 1990 was held on April 5 at Belton Park G.C. I am eternally grateful to my own captain and committee for their help on this occasion.

The lecture was delivered by Jeff Taylor of Johnstone’s Seeds. The subject was ‘Golf Course Grasses and Wild Flowers’. This proved a most interesting topic to the members present.

Our thanks to Johnstone’s Seeds who also provided the refreshments for the evening - these were laid-on by Jim Fulton our local representative.

Membership of the section has now risen to 52. As our area is very spread-out we would appreciate venues for meetings in the south of our area.

Our section chairman Graeme Patrick and myself, accompanied by our wives attended the international education conference at Egham. The lectures were varied, interesting and very well delivered making the three days fly by.

Our wives were given a very well planned tour of Windsor and London keeping them very content (house points scored). Many thanks to BIGGA from the wives.

CONT. ON PAGE 24

AROUND THE GREEN

THE SS100 . . . FIRST ON THE GREEN

IT GRADES... IT SHREDS... IT BLENDS...

Now, from GRADEALL comes a new concept in greenkeeping. A unique combination of blending, shredding and grading in a single unit that gives you:

• MAXIMUM MOBILITY
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The SS100 performs aggressively on even the poorest quality damp soil with stones, shrubs and sods producing high quality loose and manageable soil. In fact, the SS100 turns tough, lumpy organic humus into fine, workable compost.

From cricket pitches, to bowling greens, to golf greens and fairways... indeed any turf area... you’ll benefit from the SS100’s unique capabilities.

CALL US...

If you want to make the GRADE!

June 90

GREENKEEPING MANAGEMENT 23
SOUTH COAST SECTION

DETAILS of the Section's summer tournament are as follows: Venue - Highcliffe Castle Golf Club; date - Tuesday, 31st July; time - Teeing off from 1 p.m.; fee - £10 per person; closing date - 21st July.

The competition, consisting of a member and partner from their club, will be the usual format of an 18 hole four ball better balls.

Written entries giving name and address, name of partner and current handicaps, together with the current fee, of a member and partner from the club, should be sent to: Mr Joe Burdett, 948 Castle Lane East, Bournemouth BH7 6SP. Tel. 0202 483017.

Section members were deeply shocked to hear of the death of our President's son in a car accident. Our deepest sympathy goes to Jim Fry and his wife at this terrible time.

BOB DENNIS

NORTH-WEST SECTION

Deaths of our President's son in the autumn tournament, and address, name of partner and current handicaps, should be sent to: Mr Joe Burdett, 948 Castle Lane East, Bournemouth BH7 6SP. Tel. 0202 483017.

Section members were deeply shocked to hear of the death of our President's son in a car accident. Our deepest sympathy goes to Jim Fry and his wife at this terrible time.

BOB DENNIS

NORTHERN SECTION

THE spring tournament took place in glorious sunshine at Selby Golf Club.

Thirty nine members played twenty seven holes of golf and twelve of them qualified for the regional final of the Iseki tournament, later in the year.


These people will be notified by the regional administrator of the date and venue of the regional final. Many thanks to everybody at Selby Golf Club, the caterers who gave up their day off, head greenkeeper Steve Capel and his staff for their hard work, and finally the club committee for allowing us the courtesy of their course on the day. Thank you.

I hear of more changes in the section the latest being Steve Heaston's move from Skipton to Otley G.C. and committee man Brian Carr moving from South Leeds to Fleye Golf Club as course manager.

After golf the next event on the social calendar was the annual dinner dance. Tickets were brisk and almost 90 people attended, many of our younger greenkeepers were among them. A good night was had by all. Many thanks to all at Baildon Golf Club for their help and hospitality.

Some late news from across North Wales - the annual Battle of the Roses golf match will take place on Thursday, August 23 at Bury G.C.

Placements are still available for the Autumn Tournament at Malton and Norton Golf Club on Wednesday, October 10.

BOB LUPTON

KENT SECTION

WE seem to be entering the time again when staff are on the move, which seems to come about every couple of years as members golf pastures new.

The most notable move is that of John Millen from Canterbury to the new development at the Weald of Kent Golf Club near Headcorn. Under John's guidance things certainly seem to be shaping up well down there and I am sure that he will find the travelling a lot more to his liking, as you can see his house from the course, some 10 minutes away, rather than his former hour or so trip to Canterbury (road works permitting).

I understand that we are soon to be joined by another Scotsman who will be taking over at Tenterden. Perhaps we will soon be able to play England v Scotland matches in the section on our golf days. Of course I am only joking - we would probably have trouble scraping together a team, especially as we had the very poor attendance at the last Spring Lecture by Inter Seeds at West Malling last month, the support for which certainly calls into question whether we will be organising any educational lectures for next year.

Paul Copsey has returned to Barnershurst Golf Club as Head Greenkeeper, with more than one or two problems to sort out, certainly no question of place of origin here as he was born in a maternity home overlooking the 2nd green 26 years ago.

On the subject of information I seem to be in competition with Andy Johnson at Sene Valley as to who is the last in the county to receive his magazine, if one arrives at all, that is.

Fortunately I have been able to borrow a copy to read for the past couple of months, although I would like my own copy of the Ransomes Group Advert, in their Greenkeeping Management, at some point in the future.

P. COPSEY

... the Around the Green section is 11 years old. I forgot to put pen to paper and let me, and everyone else know what's going on in your neck of the woods.

AROUND THE GREEN

Cont. from Page 23
There are now 60 satisfied customers working the Watton Turf Combine. This machine has been very well received in the trade with machines sold in England and The Continent to both leading turf companies and individual customers.

Delivered to Mr. Welton of Wymeswold, Leicester.

Delivered to Mr. Fryer at Warrington

A. & A. Watton, Turf Equipment (Bournemouth) Ltd., 20 Headswell Crescent, Redhill, Bournemouth. Tel: (0202) 515067
PRODUCT FOCUS

JACOBSEN TURFCAT NOW OFFERS FOUR-WHEEL DRIVE TRACTION

Jacobsen’s versatile Turfcat T422D now features the hill climbing traction of on-demand four-wheel drive. A differential lock gives the T422D even greater traction to tackle slopes too steep for two-wheel drive mowers.

The Jacobsen Turfcat T422D with four-wheel drive.

The Turfcat T422D has a low maintenance liquid-cooled diesel engine for years of trouble-free service. A high efficiency hydraulic implement drive provides smooth, quiet power to attachments. The T422D can be equipped with front-mounted 60 and 72-inch rotary mowing decks, or Jacobsen’s unique 60-inch fine-cut flail. In addition, a snow thrower, straight blade blower or rotary brush can be connected to the four-wheel drive T422D for all-season maintenance work.

The Bourgein Sportsfield Trencher in action.

The Bourgein 700 is a brand new trencher based upon the Davis 700 - first produced in 1965. With components shipped in from Case in the United States Bourgeins have developed an all round workhorse that can lay drains and then go sand-slitting. The chassis has been strengthened and up-graded and the engine horse-power has been increased to 50hp. The 700 is fast enough to be competitive and is the only sportsfield trencher on the market that can trench 100mm, 150mm and 200mm width down to a metre deep.

Bourgeins have tailored the machine to the British leisure industry and European sportsfield market with their own attachments - the NariDrainer and the Oxford Wheel.

SHIBAURA TRACKED TRANSPORTER

The Shibaura tracked transporter is the go anywhere tool for moving loads up to 450kg. Two models of the very robust and very manoeuvrable transporters are available with very low ground pressure. Both models mounted on rubber tracks are powered by a Shibaura 4-stroke petrol engine with two forward and one reverse gear. Steering is by breaking one track or the other and it is possible to turn on the spot. Both models have tipping bodies and are extremely useful for work in confined spaces.

TRIALS carried out by the Sports Turf Research Institute, Bingley, during 1988/89 show that Agricrop - a blend of fermented seaweed and farmyard manure with nitrogen added - achieved a significant improvement in grass cover, an increase of 7.0% over the control. This was primarily attributable to an enhancement of festuca content on turf maintained at 13mm cutting height.

Small but consistent improvements in grass colour were also recorded with the higher agricrop treatments at the medium and high fertilizer rates. Dr Paul Wilson, Agriland’s trials officer, told Greenkeeping Management that Agricrop with added iron (not used in the trial) could be expected to give a more significant “Green-up” effect. He added: “The important thing is that the STRI report confirms our own field trials, which have consistently shown improvements in grass cover...”

Agriland’s amenity range includes a wetting agent (used in the STRI trial).

BOURGEIN EXPORT 700 SPORTSFIELD TRENCHER

D. Bourgein Oxford Ltd have delivered a Bourgeins 700 Sportsfield Trencher to Dublin-based Sportsground and Field Services Ltd. The Bourgein 700 is a brand new trencher based upon the Davis 700 - first produced in 1965. With components shipped from the United States Bourgeins have developed an all round workhorse that can lay drains and then go sand-slitting. The chassis has been strengthened and up-graded and the engine horse-power has been increased to 50hp. The 700 is fast enough to be competitive and is the only sportsfield trencher on the market that can trench 100mm, 150mm and 200mm width down to a metre deep.

Bourgeins have tailored the machine to the British leisure industry and European sportsfield market with their own attachments - the NariDrainer and the Oxford Wheel.

7.0% INCREASE IN GRASS COVER WITH AGRICROP

The Shibaura tracked transporter.
Peterborough 1990.
The I.O.G. Sports and Leisure World Trade Exhibition.

September 4th-6th 1990

1990 and the "Greatest Show on Turf" moves to its new location at the East of England Showground, Peterborough. For everyone involved in the landscaping, management and maintenance of sports grounds and leisure facilities it's an event not to be missed.

With more on view than ever before, it's bound to be a year to remember and an exhibition never to forget.

The largest exhibition of its kind in the world.

The I.O.G. World Trade Exhibition has gone from strength to strength, from success to success and Peterborough will be yet another milestone in what's become the greatest exhibition of its kind, anywhere in the world.

A truly international event.

More than 24 countries will be represented and overseas trade visitors will be expected to exceed the 1500 mark. No other similar exhibition can be matched for the quality and variety of its visiting public.

A new and exciting venue.

The East of England Showground boasts the finest facilities available for this type of event, for instance there will be 20,000 square metres of working demonstrations on show.

Peterborough's centralized location is ideal for road, rail and air links, and the Showground itself boasts ample car parking spaces and easy access for everyone involved.

Many exhibits on display.

Everything that is needed for the care of sports grounds, playing fields, leisure and other amenity areas will be on show. These include: Advisory Services, Aboriculture, Agrochemicals, Buildings, Engines and Motors, Irrigation, Outdoor Furniture, Plant and Machinery, Play equipment, Protective clothing, Safety and Security, Seeds, Turf, Plants, Technical Books and Journals, Sports Goods, Waste Disposal and many more.

The Exhibition Organiser,
The Institute of Groundsmanship, 19-23 Church Street, The Agora, Wolverton, Milton Keynes,
Buckinghamshire MK12 5LG
Telephone: Milton Keynes (0908) 311856
Fax No. (0908) 311140.
(Office hours: 9.30am-4.30pm, Monday to Friday).
To create a finer putting surface...

The Ransomes GT now with new Verti-Groom is, quite simply, the most precise greens triple ever.

Now in just one operation you can groom greens and precision mow. The new greens unit with Verti-Groom attachment will reduce the build-up of thatch and give you a smoother, faster putting surface and a more consistent finish across each and every green.

Here are just some of the unique new advantages of the Ransomes GT.

With the Verti-Groom mounted ahead of the front roller, the greens unit roller base is around 20% shorter than any comparable machine.

So it gives a more consistent height of cut over undulating areas while dramatically reducing the risk of scalping. It's fully floating too so there's no risk of digging in.

You can engage or disengage the Verti-Groom attachment with a...
...you need the finest mowing precision.

Simple hand-operated clutch and for standard greens mowing, lift it well out of work.

The greens unit itself is entirely new too, making it more precise than ever before.

Now you can adjust the height of cut by increments as fine as .0025"

RANSOMES

The finest mowing precision money can buy.

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World leaders in turf maintenance machinery.
EARTHWORMS: Beneficials or pests? Part one of a report by Karen Delahaut and C.F. Koval
Department of Entomology University of Wisconsin-Madison

EARTHWORMS are found in a wide range of habitats throughout the world, having adapted to many different soil types as well as to lakes and streams. Earthworms - often called nightcrawlers, garden worms, red worms or, simply, worms - are a valuable resource to many people. They provide bait for fishing, a source of protein for food, and most importantly, they play a unique and important role in conditioning the soil. With the advent of chemical pest control, however, earthworms have become non-target recipients of many pesticides.

Earthworms belong to the phylum Annelida and the class Oligochaeta, which consists of over 7,000 species. Their bodies are long and tube-like, tapering at both ends and ranging in length from one to six inches. Another characteristic of the phylum Annelida is a segmented body, including an enlargement of several segments to produce the clitellum, a glandular organ used for reproduction. Earthworms are hermaphroditic and homosexual, and thus they may function as either a male or a female during reproduction. Self-fertilization does not occur.

Although one acre of soil may hold up to eight million earthworms, most people pay little attention to these productive and beneficial animals. They mostly go unnoticed from day to day, unless a heavy rain forces them to the surface of the soil, an angler needs some bait, or their casts disrupt a game of golf.

Earthworms benefit the soil in many ways primarily due to the physical and chemical effects of their casts and burrows. Earthworm casts, consisting of waste excreted after feeding, are composed mostly of soil mixed with digested plant residues. Casts modify soil structure by breaking larger soil particles into finer granules. As plant materials and soil passes through an earthworm's digestive system, its gizzard breaks down the particles into smaller fragments. These fragments, once excreted, are further decomposed by other worms and microorganisms. Earthworm casts can contribute up to 50 percent of the soil aggregates in some soils.

Cast production is most abundant in spring and autumn when earthworms inhabit surface layers of the soil. During this time, 20 casts per square foot of soil surface are not uncommon, and as much as 40 pounds of casts per 1000 square feet per year have been recorded.

Under conditions of extreme temperatures or moisture stress during summer and winter, earthworms migrate downward into subsoil horizons. Soil Fertility Enhanced Earthworms are also important to the nutrient availability of the soil. As they feed, they deposit digested organic matter and minerals along the burrows in the form of casts, a rich source of nutrients placed in close proximity to the plant's roots growing through the burrows.

Comparative analyses of casts and surrounding soil have shown that casts contain five times more nitrogen, seven times more phosphorus, 11 times more potassium, three times more exchangeable magnesium, and one-and-one-half times more calcium.

In soils populated by earthworms, accelerated decomposition of organic matter and an increase in available nitrogen results in greater numbers of nitrogen-fixing bacteria. Phosphorus availability also increases, due to earthworms' ingestion of phosphate rock particles and the consequent movement down burrows of phosphorus-containing casts.

Furthermore, an abundance of earthworms means an abundance of decomposed organic matter — decomposition is limited only by the amount of material available, not by earthworms' capacity to ingest plant material.

Read July's issue for Part 2.