

The Horticulturist



Are microgreens the way forward in food production?

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FROM THE PRESIDENT

Reflecting on the advances made by the Council of Trustees, Branches and Management Board I can see that we are making progress in implementing our strategic goals. The Specialist Interest Group (SIG) on Social and Therapeutic Horticulture held an open meeting in June attended by many members from the sector. Although they came from different organisations, the challenges they face were common to many of them. We are now in the process of electing the committee to lead the group in making decisions on the direction they take. We offer an independent platform with the support to ensure they are successful. The Chair of the SIG will be elected on to the CIH Council of Trustees ensuring that they have true representation.

In response to the student group findings, the first newsletter specifically for students will be published in September. This will address some of the challenges highlighted in recent discussions. As you are aware we offer free membership to students. When they finish their course, they do not normally have the required experience, or in some cases the available finance, for membership. We are introducing a new level of membership, that of Early-Years Horticulturist, targeted at the recently qualified and those changing career, enabling them to become members of the CIH.

The AGM was held at the Harrogate Flower Show and visiting the show was an added advantage providing a change from the restrictions of the previous years. In May I attended the Chelsea Young Persons breakfast with a small number of young people associated with CIH. It was generously hosted by The Newt, Somerset. Some 200 young people had the opportunity to meet with the designers and builders of some of the show gardens to gain an insight into the process. They also had the chance to network with many other professionals whilst enjoying the delicious produce from The Newt.

In May the Grand Final of the Young Horticulturist of the Year competition was held at the University of Warwick. It is delightful to see young people from our industry compete with enthusiasm and show the extensive depth of knowledge they have in many subjects. Charles Shi from Royal Botanic Gardens Kew was a worthy winner.

In education the introduction of T Level Apprenticeships, and changes to other levels are progressing. Helen Sessions (CIH Development Officer) is working closely with partner organisations and trail-blazer groups to ensure we have input into future qualifications (see page 23).

Industry-wide we are still facing many challenges. The recently published Food Strategy for England advised that we produce 75% of what we consume. Edible producers in Britain are working hard to increase yields. The increase in robotics and automation will help to do this. The current economic climate with associated rising costs gives rise to concern. It is hoped that we have the resilience to overcome the challenges.

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Cover McCormack Family Farms Ireland supply cut and living microgreens (photo: McCormack Family Farms Ireland).

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Write for *The Horticulturist*

Much of the content of *The Horticulturist* arises from voluntary contributions from members in the shape of ideas, articles and photographs.

If you are interested in writing an article for the journal or have a newsworthy item please contact the Editor, Barbara Segall, at barbara@bsegall.plus.com.

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FOOD PRODUCTION Sally Drury looks at the innovative firms showing how vertical farming can help to meet a range of important challenges.

Vertical farming: who are the pioneers?

A report delivered by the independent Climate Change Committee this summer predicts global warming will hit the UK harder than originally thought, with intense heatwaves and rainfall damaging homes, infrastructure and services. Farming and food production will also be hit.

But how can we mitigate climate change and reduce reliance on imported food while feeding a rising urban population, tackling soil depletion and the loss of agricultural land, reducing food miles, minimising agriculture's greenhouse gas emission, saving water, eliminating the use of peat, providing nutrient-rich food and creating

jobs in the 'green' sector'? It sounds quite a challenge – but it is one that has been taken up by tech-bods. Vertical farming is taking off.

Restaurant suppliers

Harvest London was founded by Chris Davies and Matt Chlebek in 2017 to supply restaurants in London with locally-grown herbs and greens. It started with a hi-tech vertical farm in Leyton, growing more than 100 edible plants, including basil and lettuce, and has since established a second farm. Davies wants to develop more data-driven farms in London but is also exploring

opportunities in Birmingham, Manchester and Edinburgh.

To feed its guests with fresh, locally grown, nutrient-rich produce, Therme Group – a global provider of nature, health and culture – plans to roll out the development of large-scale vertical farms at all its resorts worldwide. The venture involves a partnership with technology from UK-based Intelligent Growth Solutions (IGS). The produce grown will be used in skin products as well as Therme's restaurants and bars.

In the summer, Bristol-based indoor farming technology provider LettUs Grow established its



Far left: LettUs Grow: work on aeroponics means plant roots have greater access to oxygen (LettUs Grow).
Above and left: Harper Adams has partnered with horticulture lighting firm Vertically Urban to work on vertical farming technology (LettUs Grow).

first Drop & Grow container at the University of Bath. Run by local produce delivery firm The Greener Greens Co, the aeroponic container is sited on the Frenchay campus and produces leafy greens, microgreens, salad and herbs for the food outlets at the university. In aeroponics, the roots have greater access to oxygen, the aim being to create healthier plant rootstocks and faster crop growth. Growers can access 30 different crop recipes by using LettUs Grow's software platform, Ostar.

There are also community projects. LettUs Grow has teamed up with the University of York

and Community Interest Company Spark:York to create Grow It York. The farm forms part of the FixOurFood research collaboration led by the University of York and funded for five years through the Transforming UK Food Systems Strategic Priorities Fund. Grow It York will investigate how vertical farming can play a role in creating positive changes within the food system, while also benefiting human health, the environment and economy.

Supplying the vertical farming technology, LettUs Grow's growing specialist Billy Rodgers explains: "The collaboration between work in technology and development, project feasibility research and real-world use of vertical farming produce is important because food sustainability can't be addressed by any one thing – you need to look at the whole food supply chain."

Hybrid businesses

The University of York, through FixOurFood, is researching how hybrid businesses that prioritise social and environmental benefit, not just profit, can be encouraged into the food system. "We hope to offer community slots for growing in the farm and are working with eco and food groups in schools to design events around the farm," says FixOurFood project lead Professor Katherine Denby. "The indoor farm can grow produce all year round with the highly local supply chain promoting the local economy, and is less vulnerable to disruption from weather, pandemics, changes to international trade and so on."

The Crop Cycle community project, funded by the Welsh Government and lead by Social Farm &

Gardens with support from the NutriWales cluster and its controlled environment agriculture (CEA) Special Interest Group, aims to create a test-bed for introducing CEA growing systems in community settings. The project combines both racks and vertical grow walls with Arize LED lighting donated by Daintree company GE Current.

"CEA represents a huge opportunity for Wales, both on a local community level and as a potential avenue to create new skilled jobs and future career paths in a critical sector," says Social Farms & Gardens joint Wales manager Gary Mitchell. "With the various community implementations, we're demonstrating the flexibility of CEA installations to add value to existing businesses, fit into existing brownfield sites and generate opportunities for communities to eat better, reduce carbon footprints and support their economies."

Vertical farming will have a future producing food in the UK, and not just for restaurants, cafes, students and local communities. If you buy herbs and leafy greens from Waitrose, Marks & Spencer or Budgens, there is a chance they are from vertical production. German company Infarm has one 'Growing Center' in the UK and plans another 9,760sq m vertical farm – the equivalent of 360,000sq m of farmland – in Bedford.

Jones Food Company, farming in Lincolnshire, already claims to own Europe's largest vertical farm but is building a facility in Gloucestershire with 13,750sq m of growing space. The project is backed by Ocado and will supply supermarkets next year.

In Norfolk, Fischer Farms is creating the



Left: Grow It York: vertical community farm forms part of a University of York food system research project (LettUs Grow).
Below: Vertical farming mitigates climate change and reduces reliance on imported food (LettUs Grow).



NEW LIGHTS: REDUCED WASTE

Derby-based Light Science Technologies has launched the 'nurturGROW' lighting product range. Drawing on its own in-house manufacturing capabilities, and backed by testing in real environments, the products comprise components that are 90% recyclable, so reducing waste. Furthermore, due to the future-proof design, 85% of components are reusable, allowing growers to upgrade quickly and easily.

The range is intended to offer a solution for use in glasshouses, polytunnels or vertical farms and for the culture of medicinal plants. Being modular in structure, the range provides more than 30 different options with variable lengths up to 2.78m, making it the longest luminaire on the market today.

It provides the scale needed to commercialise the right recipe and boasts high efficacy up to 3µmol/J and up to 30° variance so growers can choose from thousands of light recipes to improve plant performance.

world's largest vertical farm. The £25m project covers 1.6ha and aims to supply 6.5 tonnes of leafy greens, herbs and other produce to UK supermarkets every day. Founder Tristan Fischer points out: "Vertical farming enables us to be much more productive, using less space. We can grow the same amount of food in our 1.6ha building that you would in 404ha of conventional British farmland."

What's more, crops will be grown without the use of pesticides and, overcoming the criticism that vertical farming has too big a demand for electricity, the farm is running on 100% renewable energy.

Not all vertical farms are lit. In Worcestershire, Shockingly Fresh grows towers of leafy vegetables for supermarket shelves. It is the largest naturally-lit vertical farm in Britain. The company is planning 40 more.

Further research

Despite the rapid evolution of vertical farming, more research and development is planned. Scotland's Rural College (SRUC) is building a £0.5m facility to look into plant and crop science in vertical farming and Harper Adams University has partnered with horticulture lighting firm Vertically Urban to work on vertical farming technology.

To address global food challenges by using hi-

tech growing methods to produce crops all year round, a next generation vertical farming system is being designed and engineered by scientists at Nottingham Trent University, in partnership with Henley Associates. Two units are being installed, one at the university's Brackenhurst campus at Southwell and the other near Grantham in Lincolnshire.

The project, with £800,000 in funding from Innovate UK SMART Grants, is based on autonomous, data-driven controlled modular containers and the aim is to produce bigger quantities of produce in half the time, without all the weather, soil, water, transport, shelf-life and cost issues normally associated with food systems. The crops will grow in a nutrient-rich solution using an ultrasonic semi-mist culture aeroponic and hydroponic system. Roots are suspended in high humidity and intermittently misted with a nutrient solution. The system will be optimised to deliver combinations of lighting, environmental and nutrient profile mixes to suit the needs of specific crops, all powered by solar panels.

Professor of Sustainable Agriculture at Nottingham Trent University Chungui Lu says: "Each container is capable of producing three-to-five tonnes of crops a year. By the end of the project, we will have a new generation of containerised vertical farming that will improve UK resilience to environmental shocks and food security and will be beneficial for the farming industry and society, alike."

Of course, foods other than herbs, leafy-greens and microgreens are needed to sustain human health. The strawberry is another product that has been shown to be suitable for growing vertically. Hops have been grown and turned into beer by Goose Island Beer and Aerofarms in New Jersey, US. In Belgium Jan Bracke is producing saline vegetables in a vertical farm. Research at the University of California, Riverside, is looking at the production of short tomatoes, while Finnish company iFarm is experimenting with vertical farming of tomatoes and cucumbers. ●

More info

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Sally Drury FCIHort

Horticultural journalist and writer, Sally has written for *Horticulture Week* for more than 39 years and is currently the magazine's Technical Editor, and has contributed to sister titles *Turf Management*, *Amenity Management* and *WhatKit?*. She is also co-author of *The Blue Guide to the Gardens of England*. Sally has spent her whole life in horticulture, starting with summer jobs at a local nursery and having five or six garden jobs while still at school. An Honours Degree from Reading took her into horticultural journalism. She has been a member of the Institute since its foundation and has held posts on Council and as Consultant Editor for *The Horticulturist* and is currently a member of its Editorial Advisory Board. In 2010 she became a Fellow of the Institute and in 2017 she received the President's Award from then President, Andrew Gill.





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FOOD PRODUCTION For her science writing module at University College Dublin **Asomiba Rita Abaajeh** focused on microgreens and how they can provide cheaper, healthier, and more sustainable food alternatives.

Are microgreens the way forward in food production?

Farmers must grow cheaper and more nutritious food that will not harm the environment. As researchers in microgreens at University College Dublin (UCD) we believe that microgreens are the answer. They contain more nutrients that can reduce the risk of chronic diseases such as diabetes and heart disease than mature vegetables and can be easily produced on vertical farms; thereby solving the problem of food security and global agricultural land scarcity.

In September 2020 Raidió Teilifís Éireann (RTE), published a piece on Charlie McConalogue, Minister for Agriculture, Food and the Marine of Ireland, and his advice to farmers. “Farmers will need to look to more sustainable ways to farm and continue to deliver on sustainable food targets by working in partnership and

adapting to new environmental schemes and by adopting new efficiencies and inputs”.

Health and Safety Executive (HSE) guidelines for healthy eating (2016) recommend that Irish people should choose five to seven servings of vegetables a day.

According to statistics from HSE (2016) only about 37% of people in Ireland have normal body weight, 37% are overweight, and a further 23% are obese. As a result, the Healthy Eating Guidelines for Irish people over the age of five years released by HSE recommend that Irish people should choose five to seven servings of fruits and vegetables a day.

Microgreens are a more sustainable form of vegetable production that will reduce the carbon footprint of farmers and still provide consumers

with more nutrients than some mature vegetables would. Microgreens are found to contain an abundance of these nutrients and health-promoting micro-nutrients than some of their mature counterparts (Choe *et al* 2018). Hence, making it easier to eat the recommended daily quotas. They can be used as a nutrition supplement, a visual enhancement, and a flavor enhancement for many people focused on improving nutrition. With the scarcity of agricultural land and global concerns over carbon emission, their production can encourage Smart agriculture.

Microgreens are concentrated with nutrients and beneficial plant compounds. As such, they may reduce the risk of certain diseases including inflammation of the immune system, obesity (Cordain, 2005), heart disease, type 2 diabetes,



Far left: A handful of green peashoots as microgreens.

Left: Large scale microgreens production at McCormack Family Farms (McCormack Family Farms).

Above: Purple basil shoots.

Below: Peashoots in a box.

Bottom: A mixed tray of evergreens.

For further information about McCormack Family Farms Ireland email marketing@mccormackfarms.ie or use social media accounts (@mccormackfarms) or their website (mccormackfarms.ie).



cancers etc (Machlin & Bendich, 1987), reduce the severity of tumor necrosis factor dominance (Lin *et al* 2015) and stress (Finley *et al* 2011). They may also help to control weight gain preventing obesity and other complications (Rayalam, 2008). Microgreens may be eaten whole, juiced, or blended and can be incorporated into a variety of cold and warm dishes.

Eating raw vegetables such as lettuces and microgreens are risky as many cases of food-borne disease have been linked to their consumption. For example, the US Centres for Disease Control and Prevention (CDC) reported many cases of salmonella infection (salmonellosis) from salmonella-infected lettuces in 2020. However, this can be prevented by proper farming and handling practices. At UCD we are researching to

investigate and establish the best growing and handling practices for microgreens that would reduce the risk of foodborne diseases from microgreens.

This study will establish the best environmental conditions for growth and provide a practical way to obtain consistent and high quantity microgreens bound for the markets and present some suggestions for future research and development. Furthermore, it will improve the global economies in that the HSE might see a reduction in the money spent on obesity and other chronic diseases that can be managed with microgreens nutrition.

It will address agricultural land scarcity issues globally, improve food security worldwide, and would cut down on the impact of climate change

since there is no machinery used and no chemicals are involved.

On a domestic and individual scale growing microgreens is simple. Soak seeds for 6-8 hours, or according to package directions. Place two layers of tissue paper on a plate and soak with water, spread out the seeds on the paper and cover the seeds with a plate of the same size, keep in a convenient place until seeds sprout, remove the cover and place sprouting seeds in a well-lit place and water daily, leave to grow until first true leaves appear then they are ready to be harvested.

The allocation of more funding for microgreen research and production in Ireland and globally would achieve the objective of having a range of cheaper, healthier, and more sustainable foods available to the population. ●

References

- Choe U, Yu L L & Wang T T Y, 2018. The Science behind Microgreens as an Exciting New Food for the 21st Century, *Journal of Agricultural and Food Chemistry*, 66(44), pp 11519-11530.
- Cordain L, Eaton S B, Sebastian A, Mann N, Lindeberg S, Watkins B A, O'Keefe J H & Brand-Miller J, 2005. Origins and evolution of the Western diet: health implications for the 21st century, *The American Journal of Clinical Nutrition*, 81(2), pp 341-354.
- FAO 2022. www.fao.org/document-detail. Accessed 14 June 2022.
- Machlin L J and Bendich A, 1987. Free radical tissue damage: protective role of antioxidant nutrients 1. *The FASEB Journal*, 1(6), pp 441-445.
- Lin C P, Huang P H, Lai C F, Chen J W, Lin S J & Chen J S, 2015. Simvastatin attenuates oxidative stress, NF- κ B activation, and artery calcification in LDLR-/-mice fed with a high-fat diet via down-regulation of tumor necrosis factor- α and TNF receptor 1. *PLoS one*, 10(12), p 0143686.
- Finley J W, Kong A, Hintze K J, Jeffery E H, Ji L L & Lei X G, 2011. Antioxidants in Foods: State of the Science Important to the Food Industry, *Journal of Agricultural and Food Chemistry*, 59(13), pp 6837-6846.
- Pretty J, Benton T G, Pervez Bharuch Z, Dicks L V, Butler Flora C, Godfray C J, Goulson D, Hartely S, Lampkin N, Morris C, Pierzynski G, Prasad P V V, Reganold J, Rockstrom J, Smith P, Thorne P, & Wratten S. 2018. Global assessment of agriculture system redesign for sustainable intensification. *Nature Sustainability* Vol 1. pp441-446.
- Rayalam S, Dellafera M & Baile C, 2008. Phytochemicals and regulation of the adipocyte life cycle, *The Journal of Nutritional Biochemistry*, 19(11), pp 717-726.
- Health Service Executive (2016). *Health Food for Life*. Available at: <https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/heal/food-pyramid-images/vegetables-salad-and-fruit-fact-sheet.pdf>. Accessed 14 March 2021.

Asomiba Rita Abaajeh CIH Student Member

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CARNIVOROUS PLANTS Megan Webb received the Aberconway Award for the best dissertation submitted by a student or horticulturist under 30 years of age. Here she sums up the findings of her research.

Experiments in growing carnivorous plants

Carnivorous plants refer to a few specific plant genera which have the ability to directly absorb nutrients for the purpose of growth and reproduction from captured prey through modified leaves. The evolutionary significance of carnivory is a result of stresses from the nutrient-poor ecosystems which these particular plants inhabit – traditionally peat bogs and fens.

They have high needs for nitrogen and carbon due to being rain-fed in their natural habitats and therefore are highly sensitive to increasing nutrient input. However, it is the stresses from these nutrient deficiencies which has created a competitive evolutionary advantage for them, allowing various species to adapt to attract, capture and digest numerous types of prey.

Their unusual appearance and characteristics have fascinated individuals world-wide for centuries. Today, although they are being increasingly cultivated for commercial distribution, only a few of the main genera and species are commonly available in garden centres, where they are often sold as short-lived novelty items. In general there is a lack of knowledge relating to their care, compounded by contrasting information found online.

Their absurd-looking leaves and abilities places

them in a separate category from your ‘average plant’. There are now so many incredible sizes, shapes and colours available due to hybridisation as well as further discoveries of new species. Carnivorous plants are such a niche subject in the plant world and personally I find there is so much to study and discover about these phenomenal plants.

Currently there are over 800 known species of carnivorous plants all adapted to suit different environments based on their natural habitat, thus allowing them to be grown by individuals across the globe. The increase of these hobbyist growers has aided in the further awareness and cultivation of this particular plant group, yet there is little up-to-date scientific research available with most being suggested theories or based on speculations from other non-carnivorous plant groups. Therefore, they are often mislabelled as ‘difficult to keep’.

In the UK and across the world there are several specialist plant nurseries dedicated to the growing and distribution of carnivorous plants. The sales of carnivorous plants have increased significantly as they become more well-known and popular as they are now often highlighted in magazines, documentaries and also appear at major plant shows.

At risk

Despite gaining a competitive advantage through their unique ability, the future of our native wild carnivorous plants is at risk due to fears of extinction, a result of factors such as increased poaching, climate change and loss of habitat due to the harvesting of peatlands. Some 25% of the worlds’ carnivorous plants are also at risk of extinction.

Carnivorous plants grow in some of the most ecologically important habitats, such as peat bogs, the health of which is an important factor in the long-term survival of carnivorous plants. Not only do they produce habitats for flora and fauna, but vast insect populations rely on these habitats, creating a symbiotic relationship with plant species which forms a natural ecological food web.

The continued harvesting of peat has a severe effect on the surrounding climate. Peat bogs serve as vital carbon sinks and once destroyed, vast quantities of carbon dioxide stored over several hundred years are released back into the atmosphere, contributing to climate change. This threat to these plants has been increasingly highlighted in books, websites and documentaries. Recent preservation plans have aided in the increased

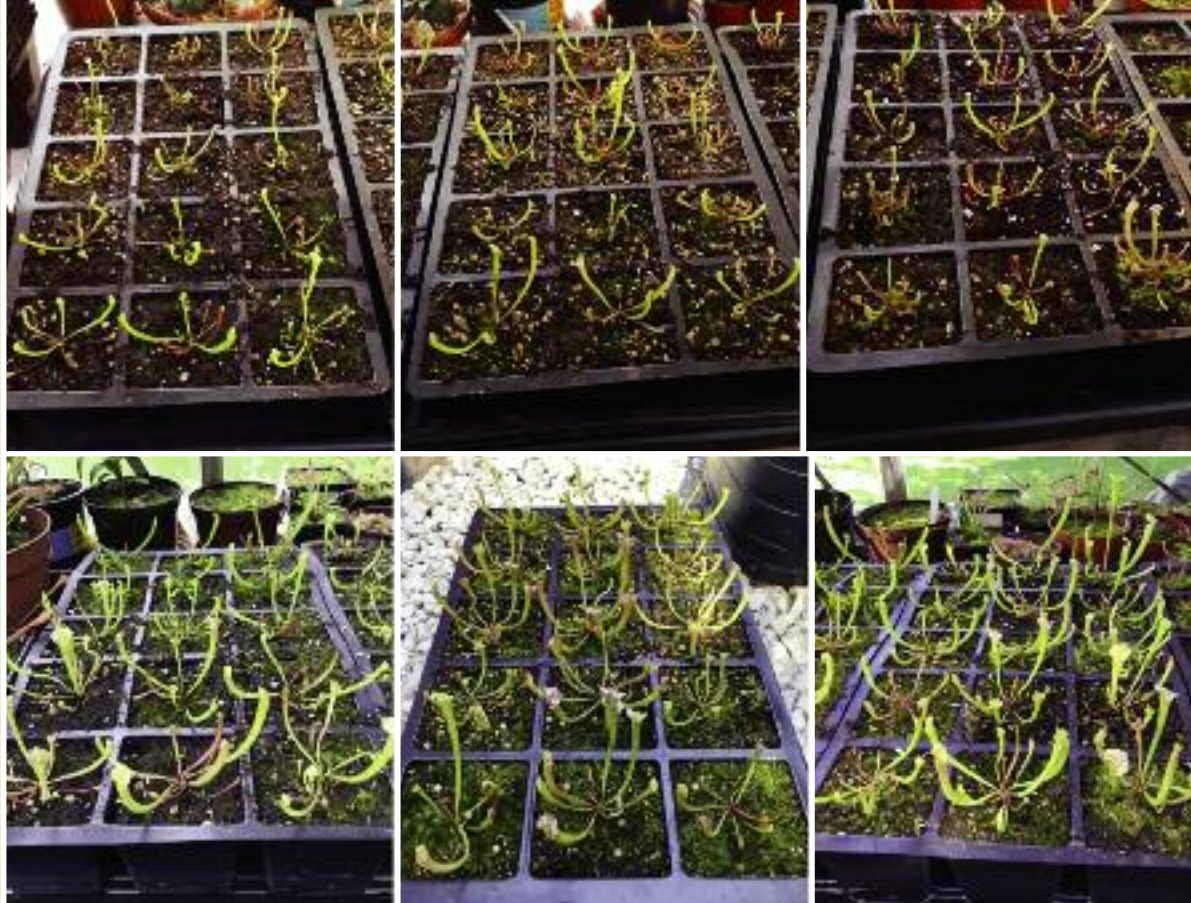
Far left: *Sarracenia leucophylla* x *moorei* seedlings that were used for the trial two years later, showing their true colours and markings.

Left: The tallest of the control seedlings – the dark spots within the traps are captured insects.

Right: The first day of the trial and how the plants were set up – in order of treatment: foliar, soil, control.

Below right: The three trays in week 12 on the last day of the experiment – in order: foliar, soil, control.

(All photos: Megan Webb)



conservation of carnivorous plants, which has had a noticeable plant population increase, but there is still a need for greater awareness to stress the importance of these plants and the threats to their existence.

Recently there has been an increase in the number of carnivorous plant hobbyists who have begun to experiment on various carnivorous plant genera to enhance current knowledge and to test what is already known about them. One of the most trialed subjects is supplementary feeding with small concentrations of high nitrogen fertilisers in order to give young plants a head start in growth so they mature faster in order to present desired traits quickly.

Sarracenia are herbaceous perennials that have special pitfall traps which aid in storing of prey and are especially favoured in these experiments as they are slow-growing when sown from seed and can take up to four years to reach maturity. The increased hybridisation of these plants in recent years, has resulted in growers needing to encourage growth in order to gain highly desired colour, shape and sizes quicker.

Sarracenia are also often used in such experimental feeding trials as they have one of the best tolerances to the changing environment

compared to other carnivorous plants. Like most bog plants, they have a high degree of phenotypic plasticity which allows them to respond to rapid changes in the environment and alter their growth rate to survive the conditions. However, there is little scientific study of *Sarracenia*, especially that of the taller species and little is known about responses to fertilisation.

The trial

I decided to undertake an experiment to test the rate of plasticity in *Sarracenia* seedlings when subject to supplementary nutrients in order to explore growth responses for a wider understanding of these plants amongst growers. The trial was conducted on *Sarracenia leucophylla* x *moorei* seedlings which differed to the most scientifically researched *Sarracenia purpurea*, thus taking a more experimental perspective to the research which similarly mirrored that of hobbyist experiments for their own personal collections.

I used 45 one-year-old, *Sarracenia leucophylla* x *moorei* seedlings in the trial. They were split into three trays with 15 square (7cm x 7cm) cells and potted in the same 2:1 ratio of peat and perlite.

Each tray was given a different treatment. In tray 1, Maxicrop® The Original Seaweed Extract

CARNIVOROUS PLANTS

There are currently around 12 known families of carnivorous plants which comprise multiple genera (around 20 genera are known). And there are now around 800 species of carnivorous plants currently known. Listed below are the ones most commonly found in garden centres:

Dionaea (venus flytrap)
Drosera (sundews)
Nepenthes (tropical pitcher plant)
Pinguicula (butterwort)
Sarracenia (North American pitcher plant)
Utricularia (bladderwort)

Most popular starter plants for hobbyists are venus flytraps (*Dionaea muscipula*), cape sundew (*Drosera capensis*) and tropical pitcher plant/monkey cups (*Nepenthes ventrata*). A larger range of carnivorous plants are available in the UK from specialist nurseries.



Colouration shown in week 4 from the *Sarracenia* seedlings undergoing soil fertilisation.

Right: *Sarracenia* seedlings a month after the trial. Note how all pitchers have resumed regular growth and are similar heights.

ECOLOGICAL SIGNIFICANCE OF CARNIVOROUS PLANTS

Bog plants have a high level of phenotypic plasticity, in which their general evolutionary response is to alter growth based on their surrounding environment. This relates to many carnivorous plant species. It is noted that various species have a 50% lower photosynthetic rate than non-carnivorous plants, therefore they have evolved to produce different leaf shapes for better entrapment and nutrient absorption which allows an increased production of chlorophyll. These caloric stresses are one of the many factors which they have evolved to cope with the nutrient content within the soil of their habitats and the surrounding air temperatures.

The significance of carnivorous plants morphological plasticity allows them to control nutrient uptake through the investment of carnivory based on the surroundings. For example, some species may invest in attractants such as nectar production or trap size as a result of nutrient limitation stresses. Similarly, the plant may produce non-carnivorous leaves or phyllodia which are seen in *Sarracenia* when nutrient content is high, thus relying on photosynthesis. Therefore, in some scientific studies it is seen that some carnivorous plants serve as good indicator of nitrogen deposition, changing their morphology in order to survive fluctuations in the environment. Some species are better suited to this than others, and these morphological reactions are only significant for short periods of time and will not aid in long time survival if required conditions are not eventually met.

The future of carnivorous plants is still unclear despite the increase in popularity. In order to guarantee their future they need more coverage in books, online platforms, social media and television to spread awareness to a wider audience. Their care requirements need to be expressed simply, clearly and in a positive way to encourage more and more individuals to feel confident enough to grow them. The increased interest and awareness of carnivorous plants is likely to aid in their survival as a plant group and the continued research of hobbyist growers will drive the future growth, conservation and preservation of this particular plant group.

Plant Growth Stimulant was used for foliar application (NPK 5:2:6). The treatment concentration chosen was Growing on, 45ml of Maxicrop original in 9L of water. This was applied via a 1L spray bottle as a fine mist every week, one spray per plant. I found no trials which used this particular fertiliser, but it was used as an alternative to a popular, hard-to-obtain and costly, seaweed extract often used in *Sarracenia* feeding trials in different countries.

In tray 2, MiracleGro® azalea, camellia and rhododendron continuous release plant food (NPK 9:14:19) was chosen for soil fertilisation as it was popular amongst many growers. Two pellets per cell was used in this tray, making 30 pellets in total, these were placed at the beginning of the experiment and were not altered throughout. However, this type of feed differed from the commonly used high-nitrogen slow-release fertilisers. I decided to select a different feed due to the short time-scale I had for the trials in the hope I would gain a faster result.

Tray 3 was the control where no fertilisers were applied so comparisons could be made.

Every week I recorded three measurements on the same day and around the same time in the early evening. I did this to gain the best result from the foliar application as it was likely to dry out too quickly if conducted during the day. Pitcher height in centimetres, the number of functional pitchers, and the number of new pitchers was recorded weekly in a notebook and photographs of significant differences and findings were taken throughout the trial. These particular measurements were recorded based on what is traditionally desired in a *Sarracenia* – attractive colour, shapes and sizes.

The trial was conducted over a three-month period from May to August, reflecting the optimum growing time for these plants, avoiding any dormancy effects. The trays were placed next to each other on a bench in my personal unheated greenhouse, all sitting in at least 2.5cm of rainwater at all times. The soil-fertilised tray had a separate tray in case of leaching. All plants received relatively the same conditions in terms of light, water and airflow. No shade netting or additional ventilation, other than the window and door of the greenhouse, was provided in the trial. Light levels and temperature were not recorded throughout this experiment, however with the summer heat wave in July 2020, temperatures within the greenhouse fluctuated, which may have affected the results.

Results

On completion there were unexpected results compared to my hypothesis that fertilisation would have an effect on the growth and the morphological characteristics of *Sarracenia* seedlings.

Firstly, those treated with foliar fertilisation did not show any significant differences compared to the other treatments, making it the least favourable treatment overall. It was noticed from as early as week three that there were noticeable deformities within seedlings. Pests and diseases were checked for thoroughly each week, but none were present, so the deformities were only noted on seedlings which went under foliar fertili-



sation. This chosen treatment was selected based on the known ecology of these plants, that some plants can absorb nutrients via their leaves due to inhabiting ombrogenous bogs (dependant on rainwater for their formation).

The experiment was conducted in a greenhouse environment which often had little air-flow and reached high temperatures during the day which would have affected foliar uptake through the leaves. Despite the deformities within the seedlings, it was noticed that they were still able to capture prey throughout the experiment and had the highest number of functioning pitchers by the end of the trial.

Soil fertilisation, which is typically the most favoured treatment amongst growers, appeared to be the best treatment. I found that it did not have the same outcome as often reported by hobbyists. Most growers report a significant height change in pitchers compared to that with no treatment. I found they differed significantly in visual traits, with focus on pitcher number, colour and shape; especially with colour as some seedlings had the 'traditional' *leucophylla* white colouration and veining from as early as week 4, thus showing traits from their parentage.

Overall, plants which underwent soil fertilisation produced the shortest pitchers compared to that of the other treatments. However, in this trial a continuous release fertiliser feed was used rather than the commonly used slow-release thus a higher stress level may have affected the expected morphology of the plants. Moreover, seedlings were used compared to more mature plants, The scientific studies known have little detail on

Sarracenia seedling functionality, other than they can take up most nutrients from prey consumption.

The control treatment, where no fertilisation was used, showed the most significant results throughout the experiment which closely related the known ecology of these plants in their natural environment. The tallest pitchers were found within this group of plants, with the tallest reaching 11cm by the end of the trial. These pitchers were also large enough to capture insects which was seen as well as the significance of colour by the end of the trial.

The evolutionary significance of *Sarracenia* allows them to invest in greater carnivory when nutrients are limited, often resulting in enlarged pitchers in order to capture and store larger prey. Plants also produce a nectar to lure in prey through the production of 'wings'. These are flat pieces of leaf in front of the pitcher covered in nectar that attract prey to the open top of the pitcher. These traits were seen within some control seedlings within the trial. However, the control treatment had the highest number of new pitchers but not the highest number of functioning pitchers. This was unexplained as it is normally seen that plants invest into one or two larger pitchers for prey capture rather than multiple traps. This indicated that a possible secondary factor other than fertilisation had an effect on plant growth.

Even though the trial was constricted by time, a morphological response was noted by *Sarracenia* seedlings within the trial, with several individual plants showing select traits and responses of great

interest. Thus, this study showed how small increases of fertilisation can offer amateur growers potential to see visual traits amongst seedlings quicker.

I would suggest that more research is needed regarding these plants in order to provide appropriate justification of the results. ●

More info

CITES and carnivorous plants
The international trade in many carnivorous plant genera is regulated under the Convention on International Trade in Endangered Species (CITES) so a permit is needed to export and import them from the wild.

Links and references

The carnivorous plant FAQ. What carnivorous plants are covered by CITES?: sarracenia.com
If you want to know more get in touch with The Carnivorous Plant Society: the cps.org.uk
Most popular book/literature on carnivorous plants is *The Savage Garden* by Peter D'Amato.

Megan Webb

Since a young age Megan has been fascinated with carnivorous plants. She has been growing these plants for nine years and in that time she has built a collection of several hundred plants including various genera and species. Her interest in their propagation and research was what led her to take a BSc (Hons) Horticulture degree at Writtle College. Now she aims to spread awareness about carnivorous plants to aid in their future survival. Megan is on Instagram: [@carnivorous_plant_girl](https://www.instagram.com/carnivorous_plant_girl)





Project Giving Back

GOOD CAUSES Hattie Ghai, CEO of Project Giving Back, outlines the origins and workings of this new and unique initiative, now a registered charity in its own right.

Just under a year ago I started working full time at Project Giving Back (PGB) which funds gardens for good causes at the RHS Chelsea Flower Show before they are then relocated to permanent homes around the UK.

Conceived in January 2021 by two anonymous RHS Life Members, PGB is designed to help good causes raise awareness of their work and increase their fundraising potential following the pandemic. The RHS Chelsea Flower Show provides a globally recognised platform with a potential audience reach of millions, offering charities an unrivalled springboard for raising awareness. In recent years rising costs and the financial effects of the pandemic have made it challenging for good causes of all sizes to have a presence at the show. The RHS is one of the few charities in the UK that opens its doors to other charitable organisations, providing opportunities for good causes to access Chelsea and benefit from the media attention the show attracts.

Between 2022-2024, PGB is committed to investing around £12m in creating gardens for good causes at the show. Funding extends to ensuring each garden is fully relocated, allowing its story and impact to continue and be enjoyed for many years to come. Our form of philanthro-

py is focused on giving charitable organisations access to an opportunity with the freedom to maximise it in a way that best suits their cause. Rather than making a direct donation to charity, we want good causes to use the Chelsea platform to elevate their work, strengthen relationships with supporters and cultivate sustainable funding sources. It can be incredibly expensive to create a garden at the show but without the financial burden of the garden to worry about, we're finding charities are embracing the opportunity and throwing their marketing and fundraising weight behind the project.

A huge impact

Our founders and trustees had a hunch that funding gardens for good causes at the show could have a huge impact, but it wasn't until the show opened its gates to the public in 2022 that we truly realised the reach of the founders' idea. Seeing how designers and organisations had approached the opportunity in such different ways, and hearing people's reactions to the gardens and the stories that inspired them, has reaffirmed my conviction that this slightly unusual form of philanthropy can have a ripple effect that will help the groups we fund achieve

their goals and leave a stronger legacy.

Setting up PGB and reaching this important first milestone has been a huge team effort, not only from our direct working group but also with the many designers, charity teams, landscapers, nurseries, creative agencies and freelancers, the RHS and many more.

I am fortunate to be working alongside some incredible Chelsea powerhouses in the form of our PGB Trustees who have given invaluable advice, support and encouragement throughout our inaugural year. Chair of Trustees, Rosie Atkins, is widely regarded as one of the most knowledgeable garden writers and editors of her generation. Building on a career in broadcast news journalism, she helped establish *Gardens Illustrated* magazine, which in its almost 30-year history has been instrumental in launching the careers of countless garden designers and has beautifully showcased the inspirational work of gardeners, landscapers, photographers and craftspeople.

During her time at the magazine Rosie brought together the emerging talents of Piet Oudolf and Arne Maynard to collaborate on a show garden at RHS Chelsea for *Gardens Illustrated* in 2000, giving her first-hand experience of what it takes to



Above left: A Rewilding Britain Landscape, designed by Urquhart and Hunt, supported by PGB.
Above: The RNLI Garden, designed by Chris Beardshaw, supported by PGB.
Below: Rosie Atkins, PGB Chair of Trustees.
 (All photos: Britt Willoughby Dyer)

create a garden at the world's most coveted flower show. Rosie went on to curate the collections at Chelsea Physic Garden, drawing on her love of history and botany to bring the story of plants and medicine to life. She continues to champion many and varied talents across the UK horticulture industry. She was a Trustee of Great Dixter for 14 years and has chaired various RHS committees, so was a natural fit to help steer the development of PGB.

Rosie Atkins, PGB Chair of Trustees, said "I know how fortunate I am to work in this industry, rich with talent and long in the making. I don't take my privileged position lightly, and through this role with Project Giving Back, would like to bring untold stories of triumph over adversity, of unimagined grief, of joyous collaborations and

diverse approaches to the many challenges we face in our modern world. Gardens are powerful and with the right combination of creativity and determination, they can achieve great things for those who pour their love and skill into them."

Joining Rosie as PGB Trustees are Alex Denman, former RHS Chelsea Flower Show Manager and now independent project manager and event consultant; Mark Fane, CEO of Crocus with over 30 years' experience of supplying and building Chelsea show gardens, and Arne Maynard, internationally respected garden designer. And supporting me in the day-to-day running of PGB is Isabella Nunes da Costa and a raft of specialist freelancers who each

bring energy and ideas as we develop and grow.

Supporting growers

While PGB exists to offer an unrivalled opportunity to good causes to tell their stories through gardens at the RHS Chelsea Flower Show, it also has an important role to play in supporting all those across the UK horticulture industry who make gardens possible. Not least of these are the specialist nurseries, whose passion for plants is the lifeblood of any flower show. We have set out to champion the people who are growing and supplying the plants we love to see in our gardens.

To support this we have invited one of the UK's most knowledgeable nursery owners, Chris Marchant of Orchard Dene, to help designers seek out and work with nurseries who can help

"Gardens are powerful and with the right combination of creativity and determination, they can achieve great things for those who pour their love and skill into them"
Rosie Atkins, PGB Chair of Trustees





Hands Off Mangrove, designed by Grow2Know, supported by PGB.
Right: Mothers for Mothers 'this too shall pass', designed by Pollyanna Wilkinson, supported by PGB.

realise their designs and planting schemes at the show.

Chris Marchant, PGB Mentor, said “It has been an absolute pleasure to work with designers and charities supported by Project Giving Back in 2022. I am a true plant enthusiast, loving nothing more than seeing imagined plant combinations brought to life. There is so much emerging talent, which makes for an incredibly exciting few years ahead and, I hope, a resurgence in interest for the people who devote their life to breeding, propagating and bringing plants to market.”

When we set up the project a year ago, being unknown and working against the clock, we chose to fund gardens for good causes in three ways – by selecting five designers who had successfully applied to the RHS but hadn't yet secured funding; by working with three designers, invited by our founders, to create Main Avenue gardens to launch PGB's first year; and by inviting designers who had not exhibited at Chelsea before to apply for our funding in the new 'All About Plants' category.

Over the past year we have worked to put in place a carefully considered selection process for designers and charities wishing to apply for future PGB funding. We work a few months ahead of the RHS application process, to ensure designers applying for space at the show can do so with the knowledge that they have secured funding. We have confirmed our intention to fund a number of gardens we hope will be allocated space at the 2023 show, all now going through the RHS application process, and we will open applications for the 2024 show on 1 September 2022. For the 2023

process, we received over 200 applications – it's a competitive process and competition really does bring forward some incredible concepts and causes that we can't wait for people to experience.

We are striving to ensure the gardens we support really make the most of their time at the show and beyond. We're encouraging charities to maximise the unique fundraising, networking and cultivation opportunities the show allows, offering mentoring and peer support every step of the way. And we're working closely with the different communications teams to maximise media attention on the incredible services the charities provide and the difference they make to people's lives.

Applying for 2024

If you have an idea for a garden in collaboration with a UK registered charity, and are interested in applying for PGB funding for the RHS Chelsea Flower Show 2024, please find more about the application process on our website (givingback.org.uk) or email us on info@givingback.org.uk. We are inviting expressions of interest from 1 to 23 September 2022, after which we will draw up a short list for a more detailed submission.

We have loved every minute of working with our 2022 teams, all of whom brought something different and innovative to the show this year. As a recap, the 12 gardens for good causes supported by PGB at the 2022 RHS Chelsea Flower Show are listed here.

The PGB Chelsea gardens

The Alder Hey Urban Foraging Station

Supporting: Alder Hey Children's Charity.

Designed by: Howard & Hugh Miller. Built by: H Miller Bros. Plants by: Bruns Pflanzen. Relocated to: Alder Hey Children's Hospital in Liverpool.

The Alder Hey Children's Charity wants to inspire children to lead active, healthy, pleasurable lives. The garden used foraging as an accessible way to address the issue of children's mental wellbeing. It showed the magic of discovery through blossoming hedgerows, an orchard meadow, and edible herbs growing through the undulating concrete strands of a picnic blanket.

The Core Arts Front Garden Revolution

Supporting: Core Arts Hackney. Designed by: Andy Smith-Williams. Built by: Conquest Spaces. Plants by: Creepers Nursery. Relocated to: Core Arts Community Garden in Hackney.

The garden aimed to reflect Core Arts' mission to support people experiencing mental health difficulties by promoting social inclusion and reconnecting individuals with their communities. It took the form of the front gardens of two urban households where the boundary was removed to make one open positive space for gardening, socialising, wellbeing and environmental gain.

Hands Off Mangrove by Grow2Know

Supporting: Grow2Know. Designed by: Tayshan Hayden-Smith and Danny Clarke. Built by: The Landscaping Consultants. Plants by: Hortus Loci. Relocated to: a community garden in north Kensington.

As an organisation that grew from the tragedy of the Grenfell Tower fire, Grow2Know's work is deep rooted in giving back to the local communi-

ty. Inspired by Notting Hill's Mangrove Nine in the 1970s, the garden highlighted issues of social injustice and the escalating climate crisis. A striking four-metre tall deforested mangrove sculpture at the centre of the garden made a clear statement about (bio)diversity and resilience.

The Mind Garden

Supporting: Mind. Designed by: Andy Sturgeon. Built by: Crocus UK. Plants by: Crocus UK. Relocated to: Mind in Furness in Cumbria.

Andy Sturgeon holds a strong personal connection with the charity Mind and his design draws on the power of spending time outdoors and connecting with others to boost mental wellbeing. The garden was a sanctuary to sit and share experiences in nature. Made entirely out of natural materials, a circular seating area was set within curved lime rendered walls, surrounded by swathes of woodland and meadows.

The Mothers for Mothers 'this too shall pass' Garden

Supporting: Mothers for Mothers. Designed by: Pollyanna Wilkinson. Built by: Landcraft. Plants by: Form Plants, with Primrose Hall Peonies and Iris of Sissinghurst. Relocated to: Hartcliffe City Farm in Bristol, Mothers for Mothers' new base.

This symbolic plant-filled garden depicted the mental health journey mothers take in pregnancy and early parenthood. It highlighted the challenges of raising young children and the associated mental health issues that can come with it, from postnatal depression to anxiety and isolation. The flow of the planting and a fractured pathway represented this transition from despair to hope.

The New Blue Peter Garden: Discover Soil

Inspired by: Blue Peter. Designed by: Juliet Sargeant. Built by: Gardenlink. Plants by: Roger Platts Nurseries and other specialists. Relocated to: RHS Bridgewater near Manchester.

In the BBC centenary year, its flagship children's programme *Blue Peter* is getting a new garden, which will be built at RHS Bridgewater after Chelsea. With the message 'Don't Treat Soil Like Dirt!', it aimed to bring the topic of the soil and the vital role it plays to the forefront. It included soil-themed art created by children from Salford, a compost heap and a subterranean observation chamber showing what is happening under the ground.

The RAF Benevolent Fund 'Strongest Link' Garden

Supporting: RAF Benevolent Fund. Designed by: John Everiss. Built by: Peter Gregory Landscapes and George Everiss Design. Planting design: Rossana Porta. Relocated to: Biggin Hill Airport as part of the Battle of Britain Museum trail.

A tribute to the pilots who have sacrificed their lives and the support that the RAF Benevolent Fund charity continues to provide to veterans. The imposing central sculpture depicted a young pilot gazing up at the sky watching the Battle of Britain in the sky above. A stone spiral wall encircled the sculpture, while over time the rusted remains of battle were covered by beautiful planting.



A Rewilding Britain Landscape

Supporting: Rewilding Britain. Designed by: Urquhart & Hunt. Built by: Landscape Associates. Plants by: Howle Hill Nursery. Relocated to: Most elements will be returned to the landscape from which they came. All plants will go to award-winning nature-based health and wellbeing charity Lindengate.

Rewilding Britain champions rewilding – large-scale nature restoration – to tackle nature and climate emergencies. The garden highlighted the amazing rewilding impact that beavers can have on reversing the loss of nature in Britain. It showed a naturally rewilded landscape in south-west England with a pool, brook, beaver's lodge, winding dry stone wall and native wildflowers. First-time Chelsea designers Adam Hunt and Lulu Urquhart were delighted to be awarded the coveted Best Show Garden award.

The RNLI Garden

Supporting: The Royal National Lifeboat Institution. Designed by: Chris Beardshaw. Built by: Cultura Group, EGIDOS and James Gray. Plants by: Kelways. Relocated to: Plants sold to raise funds for RNLI and elements distributed to several RNLI lifeboat stations.

The RNLI partnered with lifelong supporter Chris Beardshaw on a garden that draws inspiration from the charity's 200-year history, focuses attention on its enduring importance to the UK and tells the story of those who dedicate their lives to protecting our waters and pays tribute to those who lose their lives at sea.

The St Mungo's Putting Down Roots Garden

Supporting: St Mungo's. Designed by: Darryl Moore & Adolfo Harrison of Cityscapes. Built by: Gardenlink. Plants by: Hortus Loci. Relocated to: a pocket park near London Bridge.

Putting Down Roots is a horticultural therapy and training project that uses gardening as a tool to help people in their recovery from homelessness. The show garden was an 'urban pocket park', bringing people and plants together to highlight how green space can improve people's health and wellbeing, and celebrating 10 years of St Mungo's and Cityscapes working together.

A Textile Garden for Fashion Revolution

Supporting: Fashion Revolution. Designed by: Lottie Delamain. Built by: Gardenlink. Plants by: Kelways. Relocated to: Headington School in Oxford.

Throughout history plants have played an important role in fashion, but in the globalised world this link has been lost. This garden sought to re-establish the connection between plants and fashion. The design imitated a woven fabric with planting in distinctive blocks of colour, while shallow reflective pools represented dye baths, inspiring curiosity about what is really in the clothes we wear.

The Wilderness Foundation UK Garden

Supporting: Wilderness Foundation UK. Designed by: Charlie Hawkes. Built by: PW Ltd. Plants by: Form Plants. Relocated to: Henry Maynard School in Walthamstow.

The Wilderness Foundation works to create meaningful interactions with nature for younger generations, so that they may experience a sense of wonder and awe in nature, which can greatly improve mental wellbeing. This garden was all about wild plants with a predominantly green palette, creating the sense of being immersed in wilderness. In its new location at an east London school, children will experience this and care for it. ●

More info
givingback.org.uk

Hattie Ghau

Hattie has a passion for philanthropy and a career that has spanned strategy, project management and consumer branding. She joined PGB in July 2021 as Project Director, helping to shape the organisation since its inception. She is responsible for overseeing all funding applications from good causes and designers and is the main point of contact. She was appointed Chief Executive Officer in May 2022 in line with PGB being registered as a charity in its own right.



Charles Shi wins YHoY 2022



The Grand Final of the 2022 Young Horticulturist of the Year competition took place in May at the University of Warwick. As ever it was a close fought contest, with all finalists demonstrating their broad horticultural knowledge.

Charles Shi (South East) is a Botanical Horticulturist in the Arboretum at the Royal Botanic Gardens, Kew where he looks after the *Rhododendron Dell*. He has a keen interest in the application of plants in science and hopes to study this further in the future. His other interests include pagodas and their surrounding plantings and watching a garden change over the season. He also has a passion to create a garden which evokes strong emotion.

He said: "It has been lovely to apply the knowledge I've learned over my time in horticulture in such a way. The atmosphere was electric and the buzz very real. A highlight for me was meeting the amazing people at the event, organisers, and contestants all brought together by a passion for plants. Horticulture is such a broad subject area, and we all have our specialisms, so it was great to see this reflected in the other contestants. My first thought about using the travel bursary is to see some of the horticulture in Japan. I have an interest in wabi-sabi, as well as the Buddhist and Shintoistic philosophy, particularly their reflections in the Japanese Garden."

As the winner of this year's competition, Charles receives the £2,500 travel bursary provided by the Percy Thrower Trust, which he will be able to use to fund a horticultural trip to anywhere in the world.

Second place went to **David Pearce** (South West), Head Gardener at the five star Whatley Manor Hotel which has an emphasis on ecological and sustainability horticulture. David hopes one day to curate a botanic garden, applying his passion for conservation, education and ecology to safeguard and conserve our plant species for the future. "Having previously graduated from the RHS Wisley Diploma course and an apprenticeship at Ventnor Botanic Garden my main focus and interest is in the merging of ecology and horticulture."



Above: The YHoY finalists with Shropshire Horticultural Society Chairman Maelor Owen (far left) and Susan Nicholas President of the Chartered Institute of Horticulture (far right). The Young Horticulturist of the Year 2022 winner, Charles Shi, is centre. **Below:** The logos of the national sponsors of the competition.

Third place went to **Jonathan Strauss** (Eastern), who is a gardener at Emmanuel College, Cambridge and has recently setup his own business, Glasshouse Gardening, Cambridge, providing specialist care for privately owned glasshouse and conservatory plant collections. "I love working with tropical plants and cacti, and I am happiest when working under glass, propagating plants. My career aspirations are to increase my horticultural knowledge, specialising in the management of plants in protected environments."

Runners up: **Sarah Simpson** (Ireland), is the Assistant Manager at Tully Nurseries in Dublin. Sarah's main areas of interest are sustainable and ecologically focused landscape design and cut flower growing/floristry. Sarah completed her Level 6 Horticulture Certificate in 2021 at the National Botanic Gardens, specialising in landscape design. "My intention is to find an internship in landscape design/architecture with the plan to have my own design and floristry practice in the future."

Stuart Harding (Scotland), is working at Holyrood Palace with Historic Scotland which maintains and develops the gardens for the Royal Household. Stuart is currently looking into studying the HND in Horticulture and Plantsmanship. "I started off as an apprentice maintaining council green spaces in Bexhill and Hastings, and before then doing the HBGTP at Osborne House. I then moved up to Scotland and worked at Archerfield

Walled Garden before being employed at Holyrood Palace."

Lucy Whitehead (Northern) is working as an apprentice gardener with English Heritage at Belsay Hall, near Newcastle. Belsay is an exciting 12-ha Grade 1 Listed 19th Century Garden recently redesigned by Dan Pearson. She is also a member of the National Sweet Pea Society and an avid grower of both cultivated and species *Lathyrus*. She is studying through Northumberland College for a Level 2 Horticulture and Landscape Operative.

Aidan Hopkinson (North West & North Wales) is in his final year of his Professional Gardeners' Guild traineeship, working at Chatsworth House, Derbyshire. Aidan is a keen plant collector, and has particular interests in alpine species, arid plants, unusual and perennial vegetables, fruit and herbs. He is interested in native wildflowers and species hellebores as well as wildlife and organic gardening and forest gardening.

Cameron Docker (West Midlands & South Wales) is studying at Pershore College, undertaking a grower's apprenticeship while working at the college. His career aspirations include working with tropical plants abroad as a grower or setting up a business which helps the environment. "I am studying at Pershore College doing a growers apprenticeship whilst working at the college. I have worked on the College's nursery for five years as a nursery operative."

Victoria George the Competition Chair said "The 2022 Grand Final was full of sunshine, excitement and fantastic finalists and it was a pleasure to see everyone have a great day. The University of Warwick did us proud and I thank them along with all our sponsors for their support to make this competition possible. We were very lucky to have **Ann Kirkham**, one of Percy Thrower's daughters, attend the Final and present the certificates, along with the new Shropshire Horticultural Society's President **Maelor Owen**, thank you both for attending and help make the day that bit more special."

We are extremely grateful to all the sponsors who have supported this year's YHoY competition. Without them



CIH President's Award

this competition wouldn't be possible.

To follow the journey of our competitors and the 2022 competition visit us on Facebook.com/CIHort, Twitter.com/CIHort, Instagram.com/cihort, and LinkedIn.com/company/the-chartered-institute-of-horticulture. You will also find a recording of the Grand Final on our website (horticulture.org.uk). Next year's competition will start in February 2023.

About the competition

The annual competition organised by the Chartered Institute of Horticulture, was established in its current format in 1990 as a way of encouraging and rewarding excellence among those in horticulture. The competition is open to any horticulturist who is below the age of 30 on 31 July.

The winner of the Grand Final receives a £2,500 Percy Thrower Travel Bursary, provided by the Shropshire Horticultural Society, via the Percy Thrower Trust.

2022 national sponsors

- Shropshire Horticultural Society/Percy Thrower Trust (providing the £2,500 Travel Bursary and sponsorship of the Grand Final)
- University of Warwick
- Bord Bia (Irish Food Board)
- PlantNetwork
- Adrian Stockdale (current Editor of *Plant Names Simplified*)

2022 regional sponsors

- CEC Catering
- Cherry Lane Garden Centres
- Core Landscape Products
- Floreus Horticulture Consulting
- Howard Nurseries
- North of England Horticultural Society (Harrogate Flower Show)
- Rollins-Bulldog Tools
- Royal Horticultural Society (RHS Wisley and RHS Harlow Carr)
- Somerleyton Estate
- Stockbridge Technology Centre
- The Caley (Royal Caledonian Horticultural Society)
- The Newt in Somerset
- The Outdoor Room

Sponsorship

The CIH is interested in hearing from companies who would be willing to offer financial, or other forms of sponsorship, at all levels of the 2023 competition and beyond. Email: cih@horticulture.org.uk

At the CIH AGM earlier this year President **Sue Nicholas** made this award to **George Gilchrist**.

George has an outstanding career in horticulture and has demonstrated an ability to inspire many young people to enter our industry.

He started his career with The National Trust for Scotland firstly as a Youth Trainee at Greenbank Garden before progressing onto Threave School of Horticulture.

George had the opportunity to work and study at some of the world's great gardens including the Royal Botanic Gardens Edinburgh and Kew, Longwood Gardens, Gothenburg Botanic Garden, Inverewe and Crathes.

When I think of Scotland, George immediately springs to mind. He is patriotic, enthusiastic and passionate in all he does. For the majority of his career he has lectured at Scotland's Rural College, formerly Oatridge College.

He played a vital role within Scotland branch and has held numerous roles on the committee including Vice-chair, Chair and is at present Branch Representative to Council.

George is committed to supporting and pushing forward the CIH in Scotland, and, is the lynch pin when it comes to the organisation of Grow Careers. His persuasive manner ensures that each year there is an impressive line-up of speakers to inspire young people. Pre-Covid the event has been fully booked with 250 young people attending.

One branch member noted that there isn't anything that happens within the branch that George doesn't have a hand in. Whatever he does – whether organising events, sponsorship or meetings he is very humble and doesn't look for accolades.

As a member of Council George has been supportive of everything CIH does and I thank him for his commitment. On a personal note it is a pleasure to work with you, George.



Susan Nicholas made the President's Award to George Gilchrist at York Gate, one of the gardens of the horticultural charity Perennial.

Harrogate Spring Flower Show 2022

After two years of cancellations and delays, the Harrogate Spring Flower Show finally got off the ground on Thursday 21 April, with sunshine, crowds, gardens, nurseries and much, much more.

We had four wonderful days of excellent weather to help lift people's spirits and our new look Advisory Stand, in the Garden Village, gave us a prime location to meet and greet visitors with a wide range of questions. We also met up with some of our CIH members, particularly on the Saturday afternoon, after the CIH AGM.

As a branch, we are extremely fortunate to have the North of England Horticultural Society (NEHS), organisers of the Harrogate Flower Shows, on-board as a major sponsor of the Northern Branch YHoY competition. This partnership has been in place for many years and we cannot thank them enough for their support and generosity.

The stand is staffed by volunteers from the CIH Northern Branch, including **Sue Nicholas** (CIH President), **Mike Hirst** (Branch Chairman), **Jason Daff**

(Branch Secretary), **Cailean Iain Stewart** (YHoY Regional Organiser), **Steven Whitaker-Jones** (Committee Member), **Clive Parker** and **Dave Grimshaw** as well as me!

I will not bore you with the list of questions that we were challenged with but one of the most dominant was the big issue of multi-purpose composts and the peat issue.

Mike Hirst and Jason Daff provided a selection of plants to 'dress' the stand, including a rare echium from the island of La Palma, some unusual apple varieties and a selection of shrubs, bulbs and spring bedding plants, all of which were sold off towards the end of the show, to raise funds for the Branch. Many thanks to them.

We will be staffing the Garden Advice Bureau stand at the forthcoming Harrogate Autumn Show (16-18 September) at Newby Hall near Ripon. Visit flowershow.org.uk for more details and to order your tickets.

Graham Porter FCIHort



A year on in the CIH progress

At the AGM in April **Helen Sessions**, CIH Development Officer outlined the achievements in the year between virtual and in-person AGMs.

“The CIH has come a long way since the last, virtual, AGM. It is a welcome change that we can meet in person and virtually around our eight regions this year.

The CIH launched the Pam Pointer Award for best student and the first two winners will be attending the CIH Conference at the Royal Botanic Gardens, Edinburgh on October 5 and 6. The Aberconway Award for best horticultural thesis was won by Megan Webb and I am delighted she is able to join us here today at our AGM. I wish you well with all your future horticultural ambitions. An abbreviated report from her dissertation, ‘The morphological plasticity of *Sarracenia* seedlings in response to supplementary nutrients’, is published in this issue of *The Horticulturist* (see page 10).

CIH has been involved actively with the trailblazer groups who develop the apprenticeship occupational standard and underpin T Levels technical qualifications for England. There are two trailblazer groups which I have been attending to represent professional horticulture. Horticulture and Landscaping, where the primary focus is amenity and landscaping and Production which is agriculture and production horticulture apprenticeships. In 2021 the Horticulture and Landscaping group have finalised and received approval for a new Horticulture and Landscaping Technical Manager at Level 5 (which is equivalent to a foundation degree/HND). Simultaneously the groups are working on a comprehensive review of the L2. Production has started on the writing of the occupation standard for a Level 4 apprenticeship.

CIH is working closer than ever with colleges and institutions to aid the development of new qualifications and apprenticeships. I would like to encourage employers to take on apprentices where they are able to offer their local land-based college and institutions an opportunity to visit their business and provide work experience. It is invaluable for students to learn first-hand, gain experience and inspire new professional horticulturists. If you are an employer and are keen to get the next generation involved in the industry please get in contact and we can facilitate the links between industry,



education and training providers.

Recently I have contacted the team at City and Guilds who have been awarded the contract for T Levels in England. The T Level will be a college-based technical qualification. A student will spend 80% of their time in college and 20% gaining work experience. There will be two new horticultural technical qualifications which will be launched in September 2023 – production and horticulture and landscaping. City and Guilds are currently writing the content and are asking professionals from the industry to validate, prior to submission to the Institute for Apprenticeships and Technical Education (IFATE) in July 2022. I will be attending these meetings and along with others from our industry, reading and validating course content on your behalf. It is important that the CIH is represented and that we support the next generation of training for our industry. If industry want to be involved in this process too, we can put you in touch with them.

Working with Branches we have updated and issued a new handbook and provided General Data Protection Regulation (GDPR) training for two Branch members in each region.

In September The Landscape Show was held at the NEC for the first time in two years and volunteers from branches came to assist and support the CIH stand which enabled me to network with the landscaping industry and other professional bodies. It also gave me a

chance to visit and review if we should consider attending Saltex, which was next door at the NEC.

To mark COP 26 hosted in Glasgow in November, the Institute showcased two afternoons of webinars highlighting sustainability best practice across the horticulture industry leading into our Grow Careers event in Scotland which had great attendance and line-up from across the industry.

The Institute launched its five-year strategy taking us to 2026, a summary of which can be seen on our website.

Working closely with industry partners I ensure that we publicise industry news, funding opportunities, surveys and government consultations which are pertinent to our members.

We have close ties with industry, charities, branches and I ensure we are making members aware of support available to horticulturists. If you wish to highlight to our members support available or charity initiatives, do please contact the Institute and we will ensure we circulate this important support through our network.

The Institute represents professional horticulture at The Institute of Agriculture and Horticulture (TIAH) and at the

Above: The CIH Garden Advice Bureau (see page 19), which was staffed by members of the Northern Branch at the Harrogate Spring Flower Show 2022, host of the CIH AGM.

SAVE THE DATE

Chartered Institute of Horticulture Conference
5-6 October 2022
Royal Botanic Garden Edinburgh

Routes into horticulture

Ros Burnley looks at her beginnings in horticulture and continues our series showcasing CIH members.

I helped my parents with the garden growing up and loved growing veg with my Dad. I have always had a compulsion to grow that is difficult to explain to those who do not share it. I feel fortunate that the people around me gave me opportunities to explore what it meant.

An unapologetic plant nerd, I destroyed the wood of my windowsill with poorly executed watering, read about plants and set up a gardening club in secondary school. This interest helped me to get a place at Oxford University to study Biological Sciences. I had a wonderful three years surrounded by people as enthusiastic as I was about the natural aspects of the world that we live in.

I wanted to work with plants, so I spent time as a nursery worker in the nursery stock industry before doing an MSc in horticulture at Reading University. This course is one of the casualties in the reduction of higher-level horticulture options over recent years. One of my wonderful tutors, Tony Kendle, suggested that my love of plants and itchy feet might suit the world of collection gardens and an internship abroad. He was absolutely right, and I spent two years working in collection gardens in the US (Morris Arboretum and Holden Arboretum), travelling and volunteering.

On my return I volunteered at the Sir Harold Hillier Gardens when Mike Buffin was curator and, with his encouragement, I applied for the Plant Conservation Officer for Plant Heritage working with the National Plant Collections®. I met amazing people and plants all over the country working for this extraordinary organisation. I went on to establish a network for parks managers, GreenSpace North West, before joining Lantra working at a strategic level on skills.

I now work as an independent consultant with a variety of work that has included teaching, facilitation, project management, grant bid writing, business planning and research. I really love projects that break down barriers to progression in our industry so we can use our talented people effectively. I help develop apprenticeship content because earning and working while learning has been shown to be more inclusive than full-time courses. I work on the RHS Master of Horticulture – a programme that is accessible to those who want to reach degree level while working. I do voluntary work with PlantNetwork to provide CPD and networking opportunities to gardeners. I am a huge supporter of the strategic lead in skills provided by the Ornamental Horticulture Roundtable Group.

It is now 25 years into my horticultural career and I'm still learning (I just completed my ABC Level 4 Diploma in Arboriculture). I was lucky to find horticulture so early and have such wonderful mentors at different stages, because the 'next step' has not always been clear or easy to achieve. I'm passionate about making sure that luck is less of a factor for those joining our industry today.

Ros Burnley has been involved in apprenticeships and technical education since 2008. Since 2014 she has been an independent consultant and has facilitated Trailblazer apprenticeship groups.



Ornamental Round Table Group (OHRG).

TIAH are currently developing an online information platform to highlight training gateways for agri-food production within England. Also in scope is the development of a route for individuals in the sector to log centrally their continuous professional development (CPD). Currently the TIAH remit covers farm-to-gate food production in England. They have discussed that in time, they will consider a broader industry remit.

The OHRG continue to do some great lobbying for the ornamental sector within government and its departments. Most recently this group (and others) lobbied for ornamental horticulture to be included in the seasonal workers visa programme. They are working hard to ensure that our industry complexities are fully understood and are considered as government reviews legislation in the UK.

New proposed legislation that will be under discussion this coming year and are pertinent to our industry include biosecurity protocols, genome research, peat use, water extraction and mandatory biodiversity gains as part of the new planning legislation. These are just a few of the topics being covered this year that will impact our industry.

The President, Management Board and I represent professional horticulture on both of these groups and the various sub-groups. We share all government consultations and ensure you are kept up-to-date with industry news. If you have particular industry perspectives that you wish to highlight within these groups, do not hesitate to get in contact and we will ensure that we understand the specific industry nuances and reflect these going forward in the groups.

We are working hard to represent you and our industry within spheres of influence. The CIH is also passionate about the education and training opportunities for the next generation of professional horticulturists. We will continue on your behalf to build relationships within our growing profession to be fit for tomorrow and contributing towards the UN sustainable development goals, zero hunger, life on land and good health and wellbeing.

Thank you to Harrogate Flower Show for hosting us and I am looking forward to a exploring the show after our AGM today.”

Plants, people and places

New Director for NBG Wales

Dr Lucy Sutherland is the new Director at the National Botanic Garden of Wales taking up the post in October 2022.

Joining the Botanic Garden from her role as a Strategic Consultant to the Royal Botanic Gardens and Domain Trust which manages the Royal Botanic Garden Sydney, Blue Mountains Botanic Garden and the Australian Botanic Garden Mount Annan, Dr Sutherland is an experienced executive with global knowledge of botanic gardens with a strong record of partnership building and leading highly effective stakeholder engagement across government, industry, academia and the not-for-profit sectors.

She is an Honorary Professor at the University of Adelaide and was previously the Director of the Botanic Gardens and State Herbarium in South Australia, Acting Director of the Australian National Botanic Gardens and the National Co-ordinator of the Australian Seed Bank Partnership.

Having studied for her PhD in the UK Bristol-born Lucy first visited the National Botanic Garden of Wales when it opened over 22 years ago.

botanicgarden.wales

HTA's Pearson Memorial Medal for Mark Gregory

The HTA 2021 Pearson Memorial Medal for outstanding service to the garden industry was awarded to Mark Gregory, owner of Surrey-based APL member Landform Consultants Ltd.

Mark has been in the horticultural and landscaping industry for over 35 years. Mark was voted the most influential person in the landscape and garden design industry by his peers and in July 2020 he became a Fellow of the Landscape Institute and is now a chartered landscape architect.

His tally of gardens and exhibits exceeds over 100 gardens at the Chelsea Flower Show and over 160



Above: The new Director at the National Botanic Garden of Wales, Dr Lucy Sutherland.

Above right: Margaret and David MacLennan receive the Brickell Award 2022.

Below: Rose of the Year 2023; *Rosa* 'Peach Melba'

Bottom: Mark Gregory receives the 2021 Pearson Medal from former HTA President Boyd Douglas-Davies.

Opposite top: The ten new RHS ambassadors (RHS / Luke MacGregor).

Opposite bottom: New Lowther Head Gardener, Andrea Brunsendorf.



show gardens for the RHS across all its shows. He has achieved gold medals at the Chelsea Flower Show on six occasions, in his 100th garden he won Gold, Best Construction and People's Choice. Mark is a senior RHS Garden Assessor and Garden Judge.

Mark will be a keynote speaker at the HTA Annual Conference on 14 September 2022 at the International Convention Centre, Birmingham.

Alan Down HTA Vice-President

The Horticultural Trades Association (HTA) has appointed Alan Down as Vice-President. Alan has worked in the industry for over 50 years and will support the current HTA President Boyd Douglas-Davies. Subject to approval at the HTA's Annual General Meeting in September, Alan will succeed Boyd as President, who will step down after his three-year tenure in the role.

Brickell Award

Margaret and David MacLennan received the prestigious Brickell Award 2022 from the horticultural conservation charity Plant Heritage, for their *Galanthus* (snowdrop) National Plant Collection®.

The Brickell Award recognises excellence in cultivated plant conservation and has been awarded to a different National Plant Collection Holder every year since 2003. Named after Plant Heritage's founding member and current Vice-President Chris Brickell, it also celebrates the extensive and ongoing commitment, passion and research of National Plant Collection Holders.

Margaret and David MacLennan's National Plant Collection was celebrated as 'an outstanding example of bringing together a comprehensive collection, used to increase our



knowledge and understanding of the genus', according to the judging panel.

Their collection, located in Carlisle, Cumbria, is believed to be the largest systematic and publicly accessible collection in the UK with over 2,000 taxa. John Grimshaw, Director at The Yorkshire Arboretum presented David and Margaret MacLennan with their Brickell Award at RHS Hampton Court Palace Garden Festival in July.

Rose of the Year 2023 announced

'Peach Melba' (*Kormelpea*), bred by Kordes Rosen, was introduced by Roses UK on behalf of the British Rose Trade.

Described as a climbing rose it produces large semi-double, cupped flowers in a fruity colour-mix of apricot, peach and coral with a light spicy fragrance. The dark-green, glossy foliage shows exceptional disease resistance.

It has moderate vigour and grows to a height and spread of 2m x 80cm making it a good choice for smaller gardens or for container planting.

In addition to the Rose of the Year title, 'Peach Melba' has been awarded ADR in Germany and received numerous awards from International Rose Trials in Barcelona, Paris, Rome and Warsaw. Kordes Rosen is a member of the British Association of Rose Breeders (BARB)

Plants will be available to buy in autumn from rose nurseries and garden centres.

Plants for Perennial promotion

Perennial, the charity for people in horticulture, is launching a scheme in collaboration with three major wholesale nurseries – Allensmore Nurseries, The Bransford Webbs Plant Company and Wyevale Nurseries to generate funds for the charity through a propor-



tion of plant sales.

The 'Plants for Perennial' promotion was launched at the HTA National Plant Show 2022. *Dianthus* 'Pink Celebration' from Allensmore, *Nemesis* 'Peaches and Cream' from Bransford Webbs and *Salvia* 'Cuello Pink' and *Salvia* 'Cuello White' from Wyevale are the launch plants.

The joint promotion was the creation of Mark Taylor, Managing Director at Allensmore, following a conversation with Perennial Trustee Richard Lawton at a Perennial event. Mark invited Adrian Marskell, Managing Director at Bransford Webbs and Andy Johnson, Managing Director at Wyevale, to join him in the scheme.

In direct response to the challenges brought about by the rising energy costs Perennial is supplying valuable help. Support and information is available via its helpline on 0800 093 8543 and website.

perennial.org.uk/help

Award for NGS CEO

In June Keith Weed, President of the RHS, presented the Carew Pole Award to National Garden Scheme (NGS) Chief Executive, George Plumtre in recognition of his outstanding contribution to the world of horticulture.

The Carew Pole Award ranks in seniority of RHS Awards alongside that of the Victoria Medal of Honour (its most senior 'horticulturist' award) and is named after President Emeritus, Sir Richard Carew Pole. It is presented by Council, from time to time, to those who have made an exceptional contribution to horticulture as non-horticulturists.

RHS names 10 new Ambassadors

The ten new Ambassadors are: Nicki Chapman (who will help the RHS show that you don't have to be an expert to love gardens and grow plants); Tayshan Hayden-Smith (designing his first garden at RHS Chelsea this year, Tayshan will be an Ambassador for young people and community gardening); Jo Whitley (identifies with keen gardeners who love to grow plants and will help the RHS reach new audiences about the joy of gardening); Arit Anderson (passionate about the environment, Arit will be Ambassador for the RHS Planet Friendly Gardening campaign and community gardening); Manoj Malde (as Ambassador for inclusivity, Manoj will help the RHS open its doors wider and be more accessible for all); Simon Lycett (one of the UK's best known floral artists, Simon will be an Ambassador for floral art and creativity in horticulture); Mark Gregory (RHS Chelsea veteran, Mark will be an



Ambassador for landscapers to raise the profile of this important area of the horticultural industry); Sue Kent (at RHS Hampton Court Palace Garden Festival 2022, Sue is an Ambassador for inclusivity and sharing ideas about inclusivity for the disabled community); Kate Bradbury (one of the UK's well-known wildlife gardeners, Kate will be an Ambassador for the RHS Planet Friendly Gardening campaign); and James Alexander-Sinclair (whose role will be as Ambassador for garden design and sharing accessible and effective tips for everyone to make the best of their outside spaces).

The new RHS Ambassadors, join the current list of RHS Ambassadors: Dame Mary Berry, Baroness Floella Benjamin, Alan Titchmarsh MBE, Professor Nigel Dunnett, Carol Klein, Jamie Butterworth, James Wong, Jekka McVicar, Adam Frost, Nick Knowles and Chris Beardshaw.

New Head Gardener at Lowther

Andrea Brunsendorf is the new Head Gardener at Lowther Castle & Gardens. Andrea has a wealth of experience garnered from training and working in gardens in Europe, the US and London. Her most recent roles have been at Longwood Gardens in Pennsylvania where she was Director of Outdoor Landscapes in charge of a team of 30, managing 445ha of mixed horticulture and woodland; and for a private foundation high in the Austrian Alps.

lowthercastle.org



The new generation of technical qualifications

T Levels and the future land-based workforce

The land-based sector is diverse and provides many exciting opportunities and career paths. Recently the sector has seen shortages in the workforce caused in part by the COVID-19 pandemic and Brexit. However, with the right training and education the gaps in skills and the workforce could be filled.

For those looking to enter the sector, the new generation of technical qualifications (T Levels) in Agriculture, Environmental and Animal Care will be launched in September 2023.

T Levels are delivered over two years and are designed to give learners the skills that the industries need. They bring classroom learning and an extended industry placement together, providing a mixture of technical knowledge and skills that are specific to their chosen industry or occupation. This is in addition to an industry placement of 45 days in their chosen industry or occupation as well as relevant maths, English and digital skills.

The employer voice and involvement throughout the T Level is a critical element in its development and success. Providing feedback on the content of the qualifications and assessment ensures that current industry practices are accurately reflected, building confidence that learners are equipped with the right knowledge and skills to enter work in the sector.

By offering T Level learners an industry placement, employers will build relationships with their future workforce, have the opportunity to directly input to their skills development and ultimately define and shape a recruitment pool of work-ready learners.

Employers who then use this work pool to address their employment pipeline concerns and requirements can be confident that the individual is committed to a career in the industry and comes with the relevant knowledge and skills to drive their business forwards in a competitive market.

How to get involved in T Levels

There are a number of ways that employers can be involved in the development of the TQs, from registering to receive email updates, to taking part in the essential validation groups that provide feedback on the content and assessments.

To read more about the Agriculture, Environment and Animal Care T Level, visit our website cityandguilds.com/tlevels/land-based, or sign up here to receive updates.

To be involved in the validation groups, please contact Sally Green, Industry Manager for Land-based Services (T Levels) on sally.green@cityandguilds.com

Note

In October 2021, City & Guilds were successful in securing the contract with the Institute for Apprenticeships and Technical Education to develop the new Technical Qualifications (TQs) that will be a component of the new Agriculture, Environmental and Animal Care T Level.

Helen Sessions CHort MCIHort,
CIH Development Officer

Book reviews

Borde Hill Garden:

A Plant Hunter's Paradise

By Vanessa Berridge

Photography by John Glover

Merrell, £40

ISBN 9781858946900

Borde Hill, in West Sussex, one of Britain's great gardens, is renowned for its outstanding ornamental displays and woody plant collections, notably trees, rhododendrons and magnolias.

The book tells the story of the garden in two sections. The history, reveals the development and characters behind the garden, from its Elizabethan origins to the present day. This is then followed by a tour through all fifteen different areas of the garden, ancient and modern in an 'expanded guidebook' style, from the Old Rhododendron Garden to the subtropical Round Dell and Paradise Walk.

The book's success is due to the combination of the meticulous research and outstanding writing of Vanessa Berridge and the carefully selected, atmospheric images of John Glover which complement each other perfectly. Wherever there is an important event or character, there is a supporting image, be it a painting, person, plant or document, which allows every aspect of the garden to shine. By the conclusion, you have a detailed knowledge of the garden and its creators from Colonel Stepheson Robert Clarke who sponsored many of the great plant collectors, through the twists and turns of its history and how the garden has developed over time, without the book ever becoming over academic or dry.

Horticulturists will be fascinated by the story of a garden which has been developed by one family over several generations, the lists of historic and AGM plants and catalogue of champion trees are also impressive.

It is also enlightening to learn how the current owners Andrew John and Eleni Clarke have turned Borde Hill into a garden for all seasons including commissions for famous designers including Chris Beardshaw to ensure that the garden constantly remains in the public eye. This is a garden that has never stood still and there is plenty of inspiration and ideas for the garden manager and horticulturist of today.

Beautifully produced it is both a coffee table book and detailed historical record and testament to the ongoing work and commitment of the family to continue the work of previous

generations. 'To the visitor, Borde Hill offers, quite simply, the world in one garden', Vanessa Berridge boldly proclaims. After being inspired by this book, you will definitely want to visit to judge for yourself.

Matthew Biggs, Dip Hort. (Kew) is a gardener, writer and broadcaster

Wild: The Naturalistic Garden

By Noel Kingsbury

Photography by Claire Takacs

Phaidon, £39.95

ISBN 9781838661052

Noel Kingsbury is well known to most as a writer of considerable note. He holds a unique position in being able to discuss the design as well as the planting of any outdoor space. And it is the planting that makes great design that is the subject of his latest book, *Wild*.

Divided into six themes (such as 'block planting vs intermingling' or 'natives vs exotics'), more than 40 gardens are profiled with detailed and interesting case studies. Kingsbury's underlying quest is to help inform the reader of why these designs 'work', with a clear focus on the plant combinations and communities that are created. Schemes are international in scope, from the Groningen City Garden in The Netherlands (designed by Lodewijk Blajon Landscape Architects) to Monique and Thierry Dronet's Le Jardin de Berchigranges in France. Gardens in New Zealand, the USA, Germany and Australia among others are covered too. In the UK, RHS Garden Wisley is profiled, along with other notoriety such as Keith Wiley's Wildside or James Hitchmough's Garden.

Kingsbury has access to all the designers, so we get first-hand quotes and insight into why and how the plants have been used for the benefit of the overall design. His writing is fluid, clear and consistently informative. As with so much contemporary analysis of outdoor spaces (whether private or public), the undercurrent of Piet Oudolf's influence is omnipresent but Kingsbury works hard to ensure there is a diverse range of designers profiled.

Like so many Phaidon books, it is beautifully crafted, with clear page design, amazing photography by Claire Takacs and high production values (from the tactile cover to the internal paper quality). Perhaps the simplest pleasure of this book is the hard-working photo captions: they are detailed, full of plant names and give you a shorthand way into understanding



what's going on in the scheme. The pacing of the writing, captions and photographs is spot on.

Kingsbury is one of the leading thinkers and commentators on plants and their use. Reading him is a constant source of learning and this book is an insight into the understanding of where advanced planting design currently is across the globe.

Chris Young, landscape designer and gardens consultant

Attracting Garden Pollinators

By Jean Vernon

Pen and Sword White Owl, £25

ISBN 9781526711908

There is a need to raise awareness of the importance of biodiversity and the decline in insect species and specifically pollinators. This book is refreshing in that it covers the whole range of pollinators in the UK. Most texts tend to focus on a group such as butterflies or moths. This book underlines the importance of all pollinators in terms of biodiversity, and of course food production. The decline is largely due to habitat loss and the overuse of chemicals. The fundamental change to make is to encourage pollinator friendly planting wherever possible and to ensure that these havens do not become islands that trap the pollinators and reduce the gene pool.

As well as the range of pollinators, the book includes a section on plants that are good for pollinators in terms of pollen and nectar and which can provide such forage across the months. It also notes the importance of forage for different stages of the lifecycles of various pollinators as well as their need for water.

Recent research by Nick Tew at Bristol University has highlighted the importance of the diversity found in urban gardens and their potential for being such an important habitat for pollinators. Urban gardens are understood to be nectar-rich and to cover 30% of urban land. This relates well to Jean Vernon's outline of pollinator-friendly planting whether it be bedding, herbs, vegetables, fruit, shrubs or trees.

As well as forage and water a successful habitat must have good nesting sites and these need to be as varied as possible. This book includes lots of examples from bare soil, to dry stone walls, to mossy banks, to bird boxes, to snail shells, and of course insect boxes.

This is really good coverage of such

an important area of work that so many of us have some ability to influence.

Dr Heather Barrett-Mold OBE CHort FCIHort, Past President CIH, Immediate Past Master of the Worshipful Company of Gardeners, Vice Chair of Pollinating London Together

The Tree Experts: A History of Professional Arboriculture in Britain
By Mark Johnston

WINDgather Press/Oxbow Books
£55

ISBN 9781911188889

The Tree Experts charts the story of professional arboriculture in Britain from Roman times to the present, incorporating influences from Europe and the New World which were responsible for shaping the industry over the last 2,000 years.

As an experienced arboriculturist, lecturer, academic and historical researcher, Mark Johnston is well-placed to research this topic. He documents the evolution of professional arboriculture practices and the professional status of those undertaking these works in Britain over the centuries, as distinct from professional forestry or horticultural practices.

The text style makes for ease of reading, with no expectation of prior knowledge of the industry or of the factors which influenced it, as technical terms and historical context are well elucidated. There are numerous images of prints, illustrations, woodcuts, engravings, trade cards and advertisements throughout the text, adding relevance and interest.

There are nine chapters, beginning with a useful introduction which puts the term arboriculture into perspective for the reader and explains the format of the following chapters, which are divided into broad historical periods. The conclusion section at the end of each chapter, encapsulates key points. The list of references totals around 1,000 and these are grouped at the end of the relevant chapter.

The book includes extensive detail of historical events, including the social, political and economic influences of the period in question, notable personages, botanical introductions and advancements in science to give context to the story of trees and their use through time. Nonetheless, the author points out

that the book is primarily about the advancement of professional arboriculture through the ages and the individuals who contributed to it, culminating in the chartered status of many arboricultural professionals today.

Considering the sophistication of the current industry, one might be forgiven for thinking that the development of 'best practice' guidelines for trees was a relatively recent phenomenon. Interestingly, the book references Roman authors who documented among other things, 'best practice' of the era in relation to planting and transplanting trees.

A pioneering book by Mescal in 1575 gives practical arboriculture advice that is ahead of later writings, including images of contemporary tools. In the Tudor era, a forestry publication in 1612 entitled *Olde thrift newly received*, likely written by Rocke Church, gives practical advice on the selection, planting and aftercare of trees.

It was the Romans who first introduced the idea of planting and managing trees in Britain for amenity purposes, as well as for utilitarian purposes. Indeed, they first coined the name 'arborator' for someone working with trees. The book shows how skills evolved initially through the tending of fruit trees and progressed to garden trees grown for amenity purposes. As garden design evolved, this extended to trees in the wider landscape in the estates of the nobility, and later to those of the wealthy business entrepreneurs. This inspired the development of commercial companies specialising in horticulture and landscaping, while also incorporating tree works from the late 1600s onwards.

This book will be a valuable reference source to all students of arboriculture, however it also merits inclusion in the libraries of educational institutions offering courses in horticulture, forestry, landscape architecture or similar topics. Indeed anyone with an interest in trees and how their use evolved to contribute to the gardens and landscapes of past



and present would benefit from reading *The Tree Experts*.

Dorothy Hayden PhD CIHort MCIHort Professional Member of the Arboriculture Association

The Garden Diary of Doctor Darwin
by Susan Campbell

Unicorn Publishing Group £30
ISBN 9781913491789

Susan Campbell has woven a tapestry of a manuscript around the entries of the perpetual garden diary started by Dr Robert Darwin and completed by his daughter Susan, between 1838 and 1865. The material, like all diaries, provides a snapshot into past domestic lives and creates a sense of how gardens were used and experienced over time.

The book is arranged into three sections: the first being an overview of the history of the garden and its' inhabitants, the second takes the form of a gardeners' almanac and the third a detailed plant catalogue. This structure does something arresting in terms of telling the story of the garden as it allows for individual entries for the workers, as well as the cattle, pigs, and poultry; thereby bringing to light inhabitants beyond the owners. Stories of local events and domestic life are also to be found in between notes on the use of manure and the raising of cucumbers.

The most obviously interesting element is the connection to the naturalist and scientist, Charles Darwin – as Robert was his father and this was the family home in Shrewsbury. There are some fascinating insights into the scientific nature of the garden with plant trials and descriptions of laboratories used for experiments designed by Charles and his older brother, Erasmus. The image of the young Charles and his first love, Fanny, stuffing themselves while lying in the strawberry beds, is a vignette of youthful exuberance that will stay with me.

Beyond that, the detailed knowledge that has come from Campbell's 35 years of living with and thinking about this diary is clear. Partly because of this, as well as its size and structure, this is maybe more a work to dip in and out of, rather than reading in one go, but I am sure new historical gems, all accompanied by beautiful illustrations, will be found on each occasion.

Clare Hickman is an environmental and medical historian at Newcastle University

DISCOUNT OFFER

Oxbow Books is pleased to offer 20% off *The Tree Experts* to readers of *The Horticulturist* until November 30. To obtain your discount, simply apply voucher code HORT22 to your basket when buying the book directly from: oxbowbooks.com/oxbow/the-tree-experts.html. This is not valid in conjunction with any other offer.

BRANCH REPORTS

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SOUTH EAST

New Branch Chair

For branch members who don't know our new Branch Chair, **Gerry Edwards**, here are a few details to introduce him: Gerry (shown below) lives in west London but spends a lot of time, especially during the summer months, in Swanage, Dorset. He's been a member of the Institute for many years, and successfully applied for Chartered status some time ago.

Gerry's speciality is orchard fruit, specifically apples and pears, of which he grows 250 cultivars in his own orchard. He provides expert advice to those managing, developing or renovating apple and pear orchards. Gerry is busy with the RHS, being one of their Fruit Advisors, the Chair of the RHS Fruit Group, and Vice Chair of the Fruit, Vegetable and Herb Committee. He is Chair of the UK Orchard Network, and a National Fruit Identifier. Gerry writes extensively on fruit growing and orchard management. As he says in September and October he's up to his eyeballs in apples and pears!

We're looking forward to knowing more about a different part of horticulture during his tenure!

YHoY Regional Final

This took place in March at RHS Garden Wisley, thanks to **Dr Suzanne Moss**, Head of Education and Learning at Wisley. We were delighted to be at their super new science centre at RHS Hilltop and grateful to be sponsored by them and The



Outdoor Room, who generously provided the prize money. We had some excellent competitors, but the winner was **Charles Shi**, from Kew, and Charles went on to represent the branch at the Grand Final. Our new YHoY Regional Co-ordinator is **Michelle Brandon**.

Events

Marie Shallcross, our Events Co-ordinator, is busy working on some visits. Information on forthcoming events will be emailed to members and posted on the website as usual.

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EASTERN

YHoY finalist

We were very pleased to support our regional finalist **Jonathan Strauss** who took third place in the competition Final at Warwick University on 7 May. Jonathan is a gardener at Emmanuel College, Cambridge, and has recently setup his own business providing specialist care for privately owned glasshouse and conservatory plant collections. We are very proud of his achievement and wish him all the best for his future in horticulture.

YHoY Regional Final

This year's Regional Final was held on 19 May in the beautiful setting of Somerleyton Hall, Suffolk. Our hosts were **Lord and Lady Somerleyton** and Head Gardener **Simon Gaches**. The event was well attended with **Fran Suckling** acting as quiz master, **Kristopher Harper** and **Jo Seymour Tavener** adjudicating and **Ted and Gillian Smith** helping with the ident's round.

All seven contestants were fantastic with our eventual winner, Jonathan Strauss, proving to have exceptional horticultural knowledge and a lightning buzzer reaction. Jonathan currently works at Emmanuel College Cambridge and entered the competition to test his horticultural knowledge as well as meet other young horticulturists. **Kathryn Bray**, who currently works at Cambridge University Botanic Garden



Above: All the Eastern Branch YHoY contestants outside Somerleyton Hall, Suffolk (photo: Fran Suckling).
Below left: New South East Branch Chair, Gerry Edwards.

and previously studied for the Kew Diploma was second, with **Harriet Bradnock**, currently completing a Horticultural Apprenticeship at Trinity College, Cambridge, coming third.

The other contestants were: **William Charity**, currently studying for BSc Hons Horticulture at Writtle College and working at Langthorns Plantery; **Douglas Day**, working at Emmanuel College, Cambridge; **Danny Bunting**, a self-employed horticulturist working as part of a team looking after various private gardens and the gardens at East Ruston Old Vicarage, Norfolk and **Phoebe Chambers**, full time gardener at Chatsworth House, Derbyshire.

Jonathan went on to take third place at the National Final on 7 June.

As well as the support provided by Lord and Lady Somerleyton in the form of the amazing venue we would also like to thank our other sponsors – Cherry Lane Garden Centres, Howard Nurseries Ltd, CORE Landscape and Floreus Horticulture Consultancy.

Coton Manor, Northamptonshire

In April we visited Coton Manor, Northamptonshire. We enjoyed a tour of this 4ha garden by the owner and full-time gardener, **Susie Pasley-Tyler** who, with her husband, is the current occupant of the house. This generation of the family took over the property in the 90s and have gradually improved and extended the gardens which are now open to the public Tuesday to Friday (11.30am to 5pm) for the spring/summer season. There is a popular café onsite and a plant nursery selling a good selection of plants, some of which match those to be found in the garden.

Susie Pasley-Tyler's passion is for colour and this is clearly reflected in the fantastic planting schemes throughout the garden, from jewel-coloured tulips

set to contrast with acid green euphorbias in the borders close to the house, to the fantastic collection of tree peonies and intersectional peonies spread throughout. The gardens are truly well stocked for interest in every season with the peonies poised to take over as the tulips fade followed by herbaceous plants, a wildflower meadow, roses and clematis. One of the highlights for visitors in April/May are the magical English bluebell woods which were at their peak at the time of our visit. When Susie took on the garden there was a large area dedicated to her father-in-law's passion for exotic and unusual birds and while the flamingos still remain, most of this area has now been re-imagined, with long herbaceous borders and a gentle rill. The walled kitchen garden now houses the plant nursery.

I cannot recommend this garden enough and will certainly be back to visit throughout the year to see the changing palette of colour and variety of planting as the seasons move on.

Fullers Mill, Suffolk

In May 2022, a group of members and guests attended this visit, which started off in the traditional way with a hot drink and a piece of cake, provided within the booking fee and enjoyed on the extensive lawn by Fullers Mill Cottage.

The gardens are extensive with not one, but two streams, running through the grounds along with the impressive Mill Pond, between them all providing many different environments and planting opportunities.

The gardens are laid out in such a



Left: Waterside plantings featuring *Gunnera manicata* at Fullers Mill, Suffolk (photo: Sandra Hull).

way that one is endlessly making choices on which way to turn – and then wondering what you might have missed if you had gone another way. However, there was no real time limit on the tour as the gardens close at 4pm – just be prepared to walk quite a distance. Several benches are positioned alongside the many paths encouraging one to sit and reflect and admire the views on offer at each location, and we took full advantage of this.

The vast array of rare and unusual plants – trees, shrubs and herbaceous – are a testament to the garden's creator (the late **Bernard Tickner MBE**) and make one realise just how extensive the plant kingdom is, and how much more there is always to learn.

Student member **Sandra Hull** commented: "I really enjoyed the visit on Saturday and only wished I could have stayed longer. I particularly liked the way in which the garden has its top and lower areas so that you get the best

of both worlds in one visit – heat-loving plants in dry areas counterbalanced with shady areas with woodland and water-loving plants. I've also made a note to visit again a little earlier in the year to catch the primulas at their best. I thought it was a garden where you could genuinely spend some time and relax. A couple of us also noted that as trainees in horticulture, the gardens got it right in terms of having a good number of the plants clearly labelled so that we can go away and look them up! The geese were an unexpected bonus as well!"

Fullers Mill Garden is one of the gardens belonging to Perennial, the charity that helps people in horticulture.

Johanna Seymour Tavernor MCIHort

Future events

Other visits planned for this summer included Crossing Temple, Essex, in June; the Texan Garden and Kathy Brown's Garden, Bedfordshire, in August and Chilford Hall Vineyard, Cambridgeshire, in September. I hope many of you were able to come along and I look forward to reporting on them in the next issue.

As the nights are drawing in and the weather becomes more challenging, we will be returning to our regular 'coffee and catch-up' virtual social events. These will be every month starting on the 13 October and are a good chance for Eastern Branch members to 'get together' and talk horticulture. Keep your eyes peeled for emails and social media posts with further details.

Fran Suckling MCIHort MHor (RHS)
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NEW MEMBERS

The Activity Field categorisations have recently been updated.

1. Journalism
2. Production (Non-Food)
3. Education
4. Arboriculture
5. Garden Design
6. Garden Retail
7. Greenspace Management
8. Landscaping
9. Ornamental & Amenity
10. Production (Food)
11. Research
12. Advisory & Consultancy
13. Allied
14. Botanic Garden

MEMBER

James Axford 5 Senior Engineer Oxfordshire
Nikki Barker 12 Senior Horticultural Advisor West Sussex
Ben Barnard 7 Company Director North Yorkshire
Heather Birkett 9 Senior Gardener Cumbria
Emma Bond 9 Design & Consultancy Somerset
James Charlton 4 Consulting Arborist Northumberland
Thomas Dawson 7 Project Manager Somerset
Ian Donovan 9 Garden Estate Manager East Sussex
Marc Everett 8 Managing Director Essex
Paul Greenyer 8 Landscape Business

Owner West Sussex
Claire Lahey 3 Plant Profile Project Lead London
Peter Lee 8 Landscape Business Owner/Manager
Jack Lindfield 9 Head Gardener Norfolk
Stephen Mackle 7 Parks Manager County Armagh
Tessa Mills 5 Director Garden Design Business West Sussex
Susanne Mills-Darrington 3 Tutor London
Jacqueline Morton 2 Technical Compliance Lead Merseyside
Matthew Murgatroyd 9 Deputy Head of Gardens, Highgrove Gloucestershire
Jane Robson 9 Parks Manager Bristol

Jack Sharp 9 Head Gardener Bedfordshire
Sallie Sillars 3 Head Gardener and Horticultural Therapist South Ayrshire
Brendon Sims 9 Head Gardener Cambridgeshire
Penny Snowden 9 Grounds Manager Somerset
Tony Twamley 3 Lecturer/Assistant Professor of Horticulture Wicklow
Daniel John Whitehead 8 Garden Manager Suffolk
Rod Winrow 8 MD Landscape Business West Sussex

ASSOCIATE

Emily Bones 5 Garden Designer Kent
Jonathan Gregory 8 Company Director Derbyshire

Jonathan Strauss 7 Gardener Cambridgeshire
Hayley Thurrat 14 Botanic Crew County Antrim

STUDENT

Asomiba Rita Abaajeh 11
Emily Blackmore 9 Senior Gardener London
William Charity 9 Suffolk
Samuel Edwards 8 Gardening Apprentice Kent
Emma Ellis-Adams 3 Kent
Christopher Feeney 10 Galway
Alexandra Greene 12 Volunteer Gardener/ Designer
Laurence Griffin 9 Groundsman Wiltshire
Rebecca Gulliver 9 Apprentice Gardener Argyll and Bute

Jacqueline Hall 14 Trainee Gardener Greater Manchester
Scott Hayward 13 Senior Care Assistant West Midlands
Aideen Loftus 12
Elisa Luggeri 5 Garden Designer Hertfordshire
Alyson Marshall 3 HNC Horticulture East Renfrewshire
Stella McDonough 3 Surrey
Emma Moore 14 Dublin
Claire Noble 10 Wiltshire
Katie O'Neill 5 Planting and Aftercare Assistant Glasgow
Sally-Anne Rees 5 Gardener Kent
Mary Ryan 14 Kilkenny
Ben Sayers 6 Managing Director Garden Retail Co Tyrone

Elizabeth Spence 9 Gardener North Yorkshire
Lucy Standen 6 Houseplant Assistant Hertfordshire
Oonah Stringer 9
Adam Sultan 3 Horticulture Technician Essex
Fiona Swallow 5 Corporate Responsibility Manager Hertfordshire
Elettra Tono 12 Catering Assistant
Jack Townson 9 Gardener
Clive Worsfold 5 Garden Design Company Owner and Founder Surrey
Zhiyi Wu 8 South Yorkshire

WEST MIDLANDS & SOUTH WALES

Visits

On 4 June, despite unseasonably low temperatures and national celebrations of The Queen's Platinum Jubilee, members and friends of the West Midlands and South Wales Branch assembled for a visit to Just Peonies and Stocktonbury Gardens.

Martin Rouse our host for the morning is Head Gardener at Gatley Park and has developed his cut flower business on land rented from the estate during his 'spare' time.

During the morning we toured both his original growing area and his newly developed display area. He provided excellent insights into the growing of peonies and the growth, development and future plans of his business. As well as useful and entertaining anecdotes, he offered an excellent mid-morning break with tea, coffee, cakes, cheeses and fruits!

Following our tour of the peonies, too many beauties to choose from, we were fortunate in being able to also visit the private gardens of Gatley Park, where again, Martin gave an excellent tour.

The group reconvened over lunch at Stocktonbury Gardens, where some members chose to continue with self-guided tours.

Felicity Weeks MCIHort

Future Events

10 or 17 September

Morning: Visit to Madresfield Court, Worcestershire. Lunch: The Glasshouse at Holloways has been suggested by Stocks Farm. Please book if you are interested. Afternoon: Visit to Stocks Farm, Worcestershire (3km walk on uneven surfaces). Join us for drinks in the brewery at Stocks Farm after to celebrate the end of our 2022 visits!

16 November

Winter quiz/social – online only.

Kelly Baker MCIHort

Branch Chair

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Above: Northern Branch YHoY Regional Final (left to right) Katerina Vallianatou, Nele Noormets, Bertie Swainston, Kathryn Flynn, Lucy Whitehead, Cal Stewart (Regional Organiser), Joe Lofthouse and Molly Turgoose. (photo: Graham Porter). **Below:** Peonies at Just Peonies.



NORTHERN

YHoY Regional Final

In March, the Northern Regional Final was held in front of a live audience for the first time since the start of the pandemic. It was a fantastic turn-out with almost every seat filled with friends, family, guests, colleagues and committee members. A huge thank you to all of you for supporting the competition and helping make for a fantastic day.

This year our venue was the RHS Harlow Carr's Bramall Learning Centre. A fitting building for an educational competition, that was of course accompanied by a lavish lunch from Betty's Café Tea Rooms Harlow Carr, and a guided tour from the site curator, **Paul Cook**. Thank you to both the RHS and Betty's.

Our contestants came from a broad background including student landscape architects, apprentice gardeners and specialist horticulturists. For many it was their first competition and/or being successful in reaching the Regional Final. A massive congratulation to all of them for qualifying.

Graham Porter attended but this time was permitted to enjoy the competition from another angle. Graham has stepped down from the post of Regional Organiser and handed over the reins to a former contestant, **Cal Stewart**. Although Graham was cajoled into being, 'the final word' for the given answers to a question, I am sure that he enjoyed the experience on

what was also his birthday!

Graham, once again, I thank you for all your help in the lead up to the event and will strive to uphold your legacy.

Our competition began with the identification rounds, 10 plants and 10 pests and diseases. Afterwards the contestants took their seats in anticipation for the first buzzer round. The atmosphere was electric with some incredibly strong answers and points hitting the scoreboard from every which way. After the pre-match nerves settled and the contestants began to find their feet it was clear that they all had very good knowledge of the subject and a grasp of the buzzer system. It has to be said that our eventual winner was consistently ahead of the game and boldly led from the start. **Lucy Whitehead** took home the gold and was awarded a Bulldog 'Rabbiting Spade' for her efforts and went on to represent the North in the Grand Final held at the University of Warwick.

Earlier this year we lost a dear friend and colleague, **Derek Hargreaves**. In his memory, we presented the first 'Derek Hargreaves Memorial Award'. This was given to the contestant with the highest score across the identifications rounds. Congratulations to **Bertie Swainston** who received a magnifying hand lens, an essential tool for all good horticulturists.

All of our contestants from the Northern branch are awarded the 'Bruce Rigby Memorial Prize', which this year was a copy of *The Green Planet*, the book accompanying the inspirational television show.

We would like to thank our sponsors for their generous support of the

competition particularly the NEHS-Harrogate Flower Show, Stockbridge Technology Centre, Adrian Stockdale (*Plant Names Simplified*) and Bulldog Tools.

The result was: 1st **Lucy Whitehead**, Apprentice Gardener, Belsay Hall (English Heritage), 2nd **Bertie Swainston**, Alpine Trainee, Alpine Garden Society, 3rd **Joseph Lofthouse**, Horticulturist, Harlow Carr (Royal Horticultural Society), 4th **Katerina Vallianatou**, Gardener (Newby Hall and Gardens), 5th **Molly Turgoose**, Horticultural Apprentice, Harlow Carr (Royal Horticultural Society), 6th **Kathryn Flynn**, Apprentice Gardener, Rudding Park and 7th **Nele Noormets**, Student in Landscape Architecture, University of Sheffield.
Cal Stewart MCIHort
YHoY Regional Organiser

Future events

ABM and visit to Kirkleatham Walled Garden

Members are invited to join us for the ABM on Saturday 24 September (10.30am) followed by lunch and a guided tour of newly restored Grade II Listed gardens at Kirkleatham, which reopened its gates to visitors in August 2021 after being closed for more than 30 years. Please book by email, all welcome.

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SCOTLAND

YHoY Regional Final

After a two-year gap (2020 the victim of lockdown and a virtual competition in 2021) it was a joy to be able to host a live event and allow our contestants and supporters to meet and network.

The chosen venue was the home of the Royal Caledonian Horticultural Society (the Caley) at Saughton Park, Edinburgh. The competition was organised by **Victoria George**, CIH National Organiser and **Julie Muir**, the Caley's Administrator and Secretary supported on catering and accommodation.

The competition commenced with pest/pathogen and plant identifications (based on images). The finalists were given a tour of the garden, a highlight of which was *Azara microphylla*, in flower and giving off a powerful scent of chocolate.

After lunch the competition recommenced with **Colin Ainsworth**, the Caley's President, as quizmaster

asking a series of questions, some individually directed and some on the buzzer.

On completion of the second part of the competition, **Victoria George** and **Colin Wren**, CIH member and Gardens and Designed Landscapes Manager for the Scottish National Trust, aggregated the results from the morning and afternoon sessions and **Simon Harding**, Gardener at Holyrood Palace, was declared winner of the Regional Final.

Jamie Sinclair from the Scottish National Trust's Threave Garden was runner-up and **Alexander Johnson**, from Leith Hall near Huntly, also a National Trust Property, came third.

The other finalists were **Connor Robertson** from the Japanese Garden at Cowden in Clackmannanshire; **Gallia Cochrane**, student at Moray College; **Andrew Hinson**, Head Gardener at the National Trust's Greenbank Garden, on the southern outskirts of Glasgow; and **Euan Russell**, a Horticulture with Plantsmanship student on a programme run jointly by Royal Botanic Garden Edinburgh and Scotland's Rural University College.

Neil Woodcock AIHort
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Below: Scottish Regional Final winner Stuart Harding receives his prize from Colin Ainsworth, President of the Royal Caledonian Horticultural Society.



IRELAND

Kilmacurragh visit

The Ireland Branch visited Kilmacurragh in County Wicklow in April. The garden has been given official designation as a Botanic Garden and we were able to see many of the recent accessions as well as the many trees and shrubs for which Kilmacurragh is well known such as its fabulous rhododendrons. The path lined with *Rhododendron 'Altaclerense'* was just covered with a carpet of the deep pink petals.

This was the first time the branch had met face to face since March 2020 and everyone who attended enjoyed catching up. It was also good to welcome members who have not been to events before.

ABM

The ABM took place on 27 April via Zoom. **Michael Hagan** remains as secretary, **Joe Croke** is now the Chair. **Colman Byrne** is the new Branch Correspondent.

There was a discussion about how to encourage more students to take part in the YHoY competition. As so many horticulture students in all the colleges in Ireland offering horticulture are mature, and therefore not eligible to take it, it was suggested that the competition be open to all those studying on a recognised horticulture course or under 30.

Award of Distinction

Mark Johnston has been selected by the President of the International Society of Arboriculture (ISA) to receive one of its 'Awards of Distinction' – the R W Harris Author's Citation Award. This award is granted to 'authors for sustained excellence in the publication of timely information pertaining to the field of arboriculture'. Mark will be attending this year's ISA International Conference in Sweden (11-14 September) to receive the award.

After four years of research and writing, Mark's book, *The Tree Experts: A History of Professional Arboriculture in Britain*, was published on 15 June by Oxbow Books (oxbowbooks.com/oxbow/the-tree-experts.html).

The book is reviewed on page 24 and the publishers have offered CIH members a discount.

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HORTICULTURAL RESEARCH

EDIBLE CROPS

Artificial shading can adversely affect heat-tolerant lettuce growth and taste, with concomitant changes in gene expression. Alves C M L, Chang H-Y, Tong C B S, ... Avalos L & Vickers Z M, 2022. *Journal of the American Society for Horticultural Science*, 147: 45 (open access).

Increasing growing temperatures pose problems for lettuce, a cool-climate species. Shading of romaine (cos) cvs with 50% black shade cloth in this US field study reduced maximum leaf temperature by about 10°C. Head weight was reduced but, of greater note, shading reduced total sugars but not the production of bitter components, leading to reduced sensory quality.

Artificial top-light is more efficient for tomato production than inter-light. Verheul M J, Maessen H F R, Paponov M, ... Naseer M & Paponov I A, 2022. *Scientia Horticulturae*, 291: article 110537.

Both HPS top lighting and LED inter-row lighting increased tomato yield in this winter greenhouse study. However, the benefits of inter-row lighting decreased at higher levels of top lighting. Top light at 242 Wm⁻² installed power gave overall best light-use efficiency (LUE). The addition of inter-row lighting reduced LUE but increased fruit size and quality.

Cosmetic stay-green trait in snap bean and the event cascade that reduces seed germination and emergence. Cirak M & Myers J R, 2021. *Journal of the American Society for Horticultural Science*, 146: 329 (open access).

US snap (French) beans (*Phaseolus vulgaris*) frequently possess the beneficial gene *pc* (persistent colour) causing foliage and pods to remain green during senescence. Unfortunately, *pc* also reduces seedling emergence. Seeds of these cvs appeared to be fully viable but had a thinner than usual testa, increasing fungal infection during germination. Mitigation was given by improved seed handling and fungicide use.

Effects of low and high red to far-red light ratio on tomato plant morphology and performance of four arthropod herbivores. Meijer D, Meisenburg M, van Loon J J A & Dicke M, 2022. *Scientia Horticulturae*, 292: article 110645.

Tomatoes were grown at equal PAR with R:FR ratios of 0.5, 1.2 or 5.2. The R:FR ratio of 0.5 promoted stem elongation and leaf hyponasty and significantly increased the activity of four herbivore species, especially aphids and whitefly. Increasing R:FR from 1.2 to 5.2 reduced caterpillar feeding but had no significant effects on the activity of spider mites, aphids or whitefly.

Effects of photosynthetic photon flux density and red/blue light ratio on the leaf shape and concentrations of functional and aromatic compounds in sweet basil (*Ocimum basilicum* L.). Hikosaka S, Moriyama F & Goto E, 2021. *The Horticulture Journal*, 90: 357 (open access).

Light quantity and quality can be managed to preferentially benefit the concentrations of particular functional and aromatic compounds in basil leaves. B-carotene, for example, increased with decreasing R/B ratio regardless of PPFD, whilst aromatic compounds were higher at low PPFDs and in treatments with high R.

Evaluation of critical period for weed crop competition in growing broccoli crop. Latif A, Jilani M S, Baloch M S, ... Saeed A & Mamoon-ur-Rashid M, 2021. *Scientia Horticulturae*, 287: article 110270.

Without control, weeds could greatly reduce global crop yield. In this field study, weed seeds were sown as broccoli seedlings were planted, and the effects of a single manual weeding were determined. Weed infestation was negatively correlated with broccoli yield, and early weeding (after 15 or 30 days) gave highest yields. Cvs differed in susceptibility to weed competition.

Organic fertilisers in greenhouse production systems – a review. Bergstrand K-J, 2022. *Scientia Horticulturae*, 295: article 110855

and

Review: Bokashi technology as a promising technology for crop production in Europe. Olle M, 2021. *The Journal of Horticultural Science and Biotechnology*, 96: 145.

The first review addresses the ambition that 25% of crop production within the EU, including in greenhouses, be organic by 2030. It concludes that anaerobic digestates from energy production would be well suited as fertilisers in greenhouse growing, particularly given some modulation of C:N ratios and the development of foliar sprays. The second review is focused on the potential introduction into Europe of low-cost bokashi technology from Japan to generate nutrient-rich fertilisers from food waste. The technology utilises controlled lactic acid fermentation using 'effective' micro-organisms under anaerobic conditions. Claimed benefits were improved soil fertility, plant health, yield and food quality.

Post-harvest alterations in quality and health-related parameters of cherry tomatoes at different maturity stages following irradiation with red and blue LED lights. Ngcobo B L, Bertling I & Clulow A D, 2021. *The Journal of Horticultural Science and Biotechnology*, 96: 383.

Illuminating tomato fruit harvested at the green-mature stage with either red or blue LED lights (118 μmol m⁻² s⁻²) for 48h prior to 21d dark storage at room temperature enhanced final colour development and the concentration of sugars, pigments and other health-related compounds. Lighting was not detrimental to either fruit mass or firmness.

The future of agricultural jobs in view of robotisation. Marinoudi V, Lampridi M, Kateris D, ... Sørensen C G & Bochtis D, 2021. *Sustainability*, 13: 12109 (open access).

This study assesses the full spectrum of UK agricultural occupations in terms of their cognitive/manual and routine/non-routine characteristics and found strong evidence for the potential robotisation of 70% of these. Robotisation would be likely to lead to great changes in the occupational landscape and the need for training to counter social threats by the emergence of fewer, but higher skilled, jobs.

Some recent horticultural publications have been briefly summarised by **Dr Allen Langton FCIHort**, an Honorary Research Fellow at the Warwick Crop Centre, School of Life Sciences, University of Warwick.

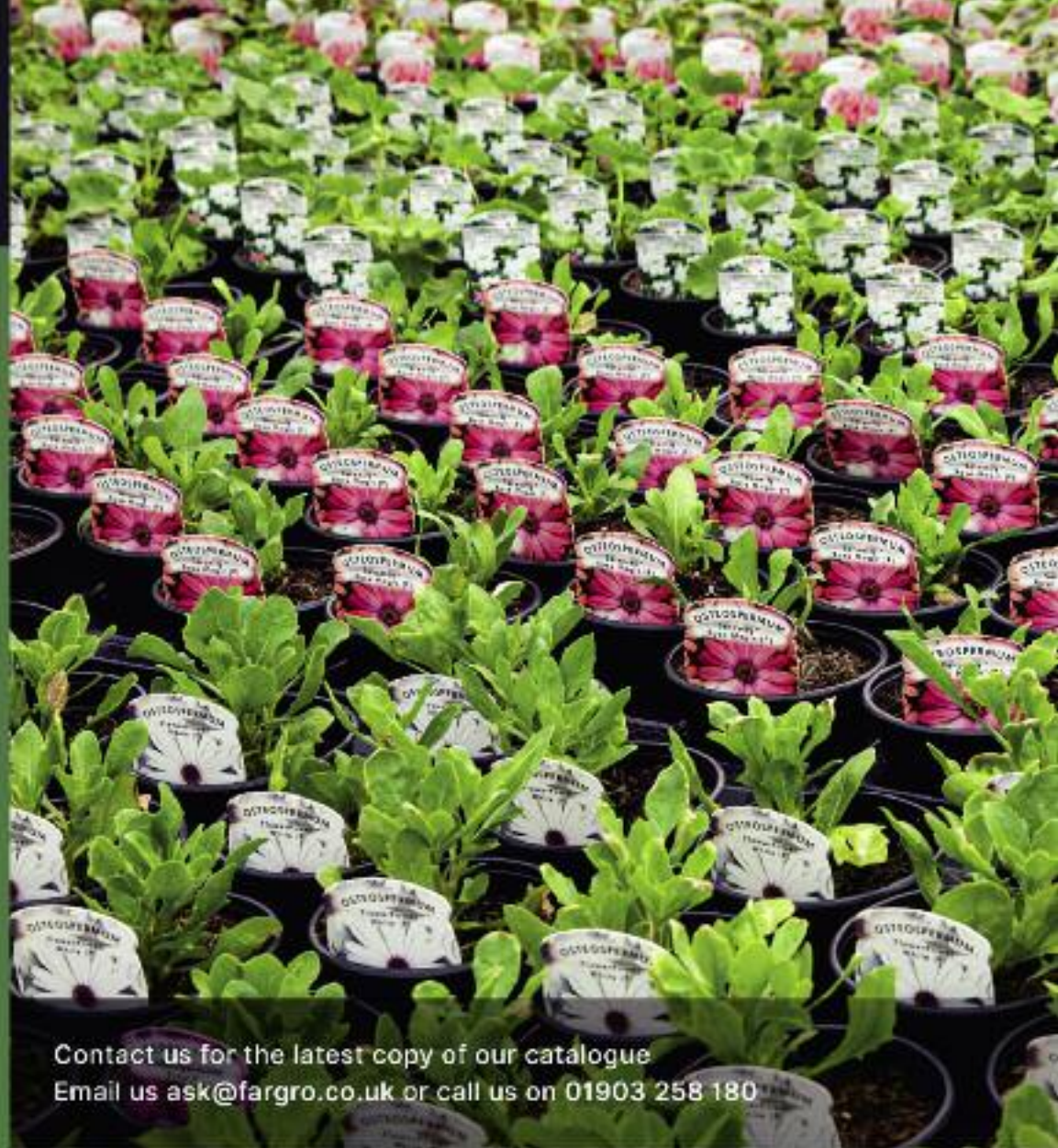


It is planned that all of the major horticultural commodity areas will be covered in this way over the course of the coming year. Of necessity, the selection represents a personal choice. Three dots in the author list of a citation indicates that there are additional authors whose names have not been shown here, but this omission will not hinder anyone locating a paper.

Please note: *HortScience* and *Journal of the American Society for Horticultural Science* are now open access journals. Articles in *Scientia Horticulturae* after Vol. 255 are now identified by article number rather than page number.

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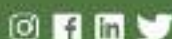
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