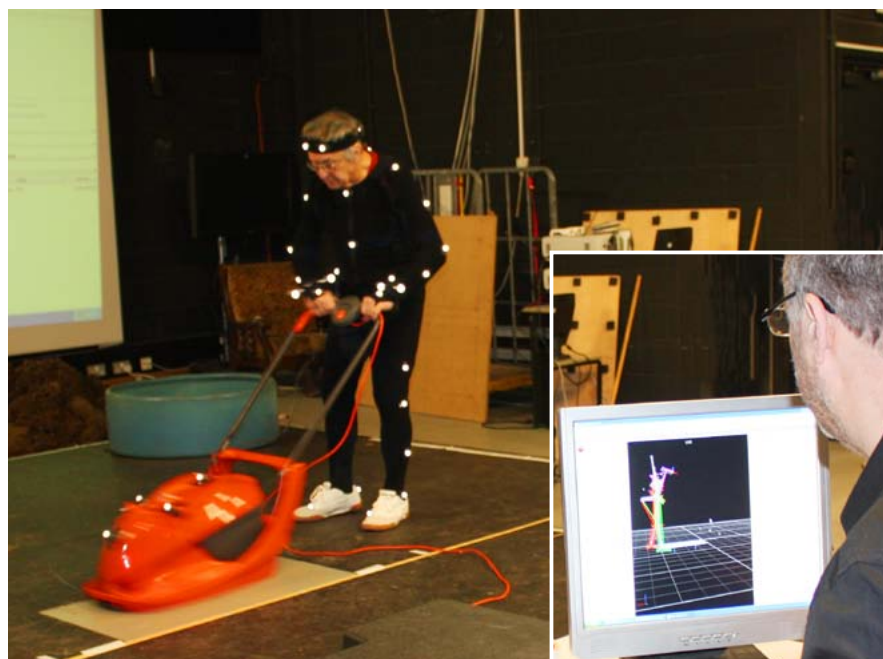


## RHS Science & Collections in 2015: “delivering plant science for all”



JULIE HOLLOBONE

RHS SCIENCE IN 2015 WILL include an emphasis on “plant science for all” and a renewed drive to publicise horticultural research through advisory services and public engagement.

Following the combination of Science and Libraries & Archives within one division last November, a particular focus of effort in 2015 will be the “Wisley Hilltop” investment project at Wisley, where the main glasshouses used to be. This will create a new centre for science, advice, and horticultural events, combining modern laboratories, a new herbarium, a library, exhibition space and additional classroom and catering facilities. Architects have now been selected for this project, while fund-raising and work on the design are already under way.

» p. 3

Above. **New research for 2015: a joint study by the RHS and Coventry University will examine the effects of gardening tools and tasks on the physical health of gardeners. Subjects wear body suits fitted with reflective sensors; their movements are then captured by 12 cameras, enabling researchers (inset) to calculate load in different parts of the body during simulated gardening activities. This is the first research of its kind in the UK.**

### New direction for advice and information

In January Siân Tyrrell joined RHS Science as Head of Horticultural Information. This new position was created as part of the current five-year strategy for horticultural science (see issue 20, May 2014), and reflects the bringing together of the Horticultural Informatics and Advisory teams within one section. Two key themes of the strategy will be of particular importance in the new role: developing the RHS’s knowledge bank, which will provide a single authoritative source for information on cultivated plants, and delivering high-quality advice to gardeners at all levels.



SIÂN TYRRELL

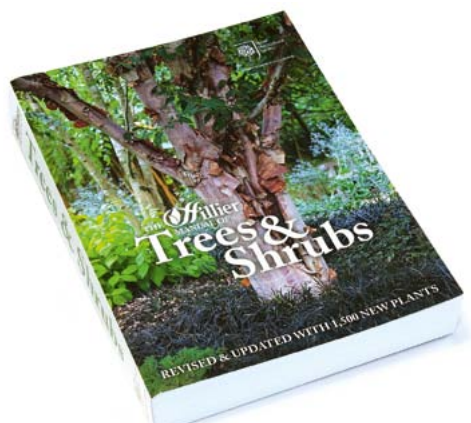
**Siân Tyrrell, who joined RHS Science as Head of Horticultural Information in January.**

A Chartered Member of the Chartered Institute of Library and Information Professionals, Siân has over ten years’ experience in information and knowledge management in the public and private sectors, including work with the World Wide Fund for Nature and (most recently) HSBC.

“Sharing our knowledge is key to our charitable purpose and to the delivery of the Science strategy,” says Siân. “I look forward to exploring how we can work together to do that.” ■

For more information about stories in this newsletter ► [johndavid@rhs.org.uk](mailto:johndavid@rhs.org.uk)

# The year in Science



## Publications

Working in partnership with Hillier Nurseries, RHS botanists revised and updated the internationally recognised guide to woody plants, *The Hillier Manual of Trees and Shrubs* (8th edn), which was published in early 2014. Other notable publications in 2014 included the annual *RHS Plant Finder* and the 820-page 2011–2013 addendum to *Sander's List of Orchid Hybrids*. Online, the RHS Find a Plant facility achieved more than 6m page views, while 68 papers and articles appeared in edited or peer-reviewed publications.

## Invisible Garden

In May, RHS Science staged its biggest ever Shows event, with the **Invisible Garden** exhibit (right) at Hampton Court Palace Flower Show. With a set-up of 17 microscopes, the displays were designed to introduce visitors to the world of garden organisms and show them how to encourage biodiversity in their gardens.



## RHS Gardening Advice

Some 88,000 advisory enquiries were processed in 2014, up 18% on 2013. A new development in 2014 was the **Growing Together Club** at the Secret Garden Sunday shows, where advisory staff (below) showed novice gardeners how to grow chillies, orchids and crocuses. Online, podcasts reached 1.7m downloads, with a monthly audience of 200,000.



## Wisley Herbarium

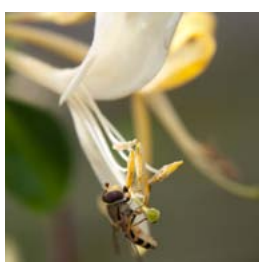
Digitisation of Wisley Herbarium continued throughout 2014: by the end of the year, 20% of Wisley's 80,000 specimens had been scanned (above), with 2,740 images available on the [JSTOR](#) website. The Herbarium was further publicised through a poster exhibit on the RHS cultivated fern collection at the **Global Plants Initiative** conference in Panama.





## Pollinator initiatives

In November the UK government endorsed the **RHS Perfect for Pollinators** scheme as part of the National Pollinator Strategy. Results from the **Plants for Bugs** project (right) at Howard's Field and Deer's Farm were prepared for publication, while RHS entomological expertise was further publicised by features on *BBC Gardeners' World* and in the *Guardian*.



## Sharing expertise

RHS Registrar Duncan Donald spoke at the **International Lily Symposium** (Zhangzhou) in March, while Julian Shaw addressed the **World Orchid Congress** (Johannesburg). In November, Tijana Blanuša gave a talk at the 12th **American Green Roof Conference** (Nashville). In the same month, at the 4th annual **RHS PhD symposium**, students presented updates on their work.



## RHS research

Long-term research into growing media, organic matter, urban greening and new pathogens (inset) continued, with phase two of the **Field Research Facility** development (above) reaching completion. This included two new state-of-the-art environmentally controlled growth rooms, while installation of a solar panel array further improved the building's sustainability.



## RHS Science in 2015 (cont.)

“Delivering the new science strategy will raise our scientific profile so that the RHS is recognised as the pre-eminent research hub and global knowledge bank for horticultural science and taxonomy,” says Director of Science & Collections Alistair Griffiths. “Our new scientific activities and research will provide high-quality evidence-based scientific knowledge that we can share with our members. Furthermore, our findings will provide evidence to influence government policies for the benefit of UK horticulture as a whole.”

The new strategy was announced last year (see issue 20), and has four themes: a global knowledge bank for gardening and garden plants, plant health in gardens, gardening in a changing world, and plant science for all. Staff for seven new posts have been recruited to help implement the strategy, including Siân Tyrrell, who will lead the new Horticultural Information team.

Meanwhile, the combination of all collections – the science and horticulture libraries, herbarium, and botanical art and photography collections, as well as associated events and exhibitions – within one division is expected to improve operational consistency, especially for those involved in the Wisley Hilltop and Digitisation projects. ■

PHOTOS: TIM SANDALL (PHALAENOPSIS, LONICERA); GEORGI MABEE (SCANNER); KATHERINE POTSIDES (MICROSCOPE); BETHANY CLARKE (ADVICE); RACHAEL TANNER (RRF); PAUL DEBOS (LADDER); BOB MARTIN (PATHOLOGY); NEIL HEPPWORTH (GREEN WALL).

## NEWS IN BRIEF

### A new British bee, a new series of talks, a new forum for taxonomists and a new EU regulation

**SCIENCE—CURATORIAL TALKS.** A new series of weekly Science—Curatorial talks began on 13 January. Subjects include *Phalaenopsis* cultivation, weather-induced physiological problems, and fruit viruses. The series ends on 31 March with a talk on Wisley's orchid collection and *Phalaenopsis* cultivation. For more information contact [Tony Dickerson](#).

**PLANT REPRODUCTIVE MATERIAL LEGISLATION SCRAPPED.** Following its rejection by the European Parliament (EP) last year, the European Commission has signalled the withdrawal of the contentious EU Plant Reproductive Material legislation. Since this was first proposed, the RHS and several other horticultural organisations in the UK have worked together to highlight the potential negative effect it could have on the horticultural sector. It is not clear what the EC's next step will be, but the RHS will continue to monitor developments and liaise with other horticultural organisations on this issue.



**Benefit-sharing: a percentage of profits from *Impatiens* 'Ray of Hope', bred from endangered *I. gordonii*, helps safeguard the Seychelles flora.**

**NAGOYA PROTOCOL NOW IN FORCE.** The Nagoya Protocol and an EU Regulation to ensure compliance both came into force in October 2014. Users of genetic resources will now need to exercise due diligence to ensure that any resources acquired after 12 October 2014 have been accessed in accordance with the Protocol and that benefits arising have been shared fairly. The UK government is still working on implementation measures, following consultation in July 2014, and the RHS will continue to meet with Defra representatives to receive updates and convey questions and concerns about the Regulation. There are likely to be no immediate moves to pursue enforcement, but government guidance will be produced as soon as possible. ■

**April sees the first European Cultivated Plant Taxonomists Forum, which is to be held at RHS Garden Wisley. The three-day event is jointly hosted by the RHS and Hortax (the Cultivated Plant Taxonomy Group).**

Ten countries are represented among the delegates, who include researchers, registrars and database experts. Each

day will be devoted to a different topic, with talks under the headings of Research, Databases, and Cataloguing the Diversity of Cultivated Plants.

"This is a rare opportunity for those who classify plants in cultivation to discuss current taxonomic issues in detail," says RHS Principal Scientist [James Armitage](#), who as Chairman of Hortax is organising the event.

## Update on species new to the UK

The ivy bee (*Colletes hederæ*) was reported to RHS Gardening Advice for the first time in October. This late-season solitary bee was first found in the UK in Dorset in 2011. It is now also found in the Midlands and continues to spread north.



**Clematis chlorotic mottle virus**, a virus potentially new to the UK and first identified in 2014 in the US, has been recorded by RHS pathologists on plants in the RHS clematis trial. Samples were submitted to the US Dept of Agriculture for identification, and the majority came back as positive. Symptoms include yellow mottling and veining, sometimes with flower distortion and discoloration.

PHOTO: HECTIONICHUS (BEE); ALISTAIR GRIFFITHS / EDEN PROJECT (IMPATIENS).





## New staff in RHS Science

**Matthew Crome** has joined the Plant Health team in the role of Senior Plant Pathologist. With some 30 years' experience as a plant pathologist in the New Zealand Institute for Plant & Food Research, Matthew has published more than

70 peer-reviewed articles and edited the journal *Australasian Plant Pathology*. He has also worked as a lecturer at New Zealand's Canterbury and Lincoln universities. His research has

focused on the identification and control of fungal diseases, biosecurity, the genetics of host resistance and pathogen virulence, and host pathogen interactions and disease resistance phenotypes. Matthew started work with the RHS in January.

In November **Kálmán Könyves** took up the new post of Horticultural Taxonomist, based in Wisley

Herbarium. As reported in issue 22 (p.5), Kálmán recently completed an RHS-sponsored PhD at the University of Reading. This focused on the taxonomy of

[hoop petticoat daffodils](#) and included the study of wild populations in Spain, Portugal and Morocco. He has also published work on *Cyclamen* and *Ludwigia*. Kálmán has already given a talk at Wisley on his *Narcissus* research, as part of the Science–Curatorial series, and is currently working on *RHS Plant Finder 2015*. Principal Scientist – Horticultural Taxonomy James Armitage welcomed Kálmán's arrival, saying, "The knowledge of modern molecular techniques that he brings from his PhD should add much to the skills we already have in the Botany team."

**Rebekah Robinson** joined RHS Science in December as Scientist – Plant Health. With previous experience at the Millennium Seed Bank and the John Innes Centre, Rebekah recently completed her PhD at Rothamsted Research, on bacterial endophytes in wheat plants. This required the use of molecular techniques

as well as whole plant research in the glasshouse and field. Rebekah also has experience in science communication and public outreach through activities such as the Cheltenham Science Festival and Royal Society summer exhibitions, while her work as a Science, Technology, Engineering

and Mathematics Network (STEM) ambassador has involved encouraging young people to pursue STEM subjects and careers in industry and research.

**Mark Corke** has taken up the position of Horticultural Technician, with the primary role of helping to manage the Field Research Facility and surrounding Deer's Farm site. Mark has an MSc in Commercial Horticulture and has worked for various commercial nurseries, as well

as undertaking landscape gardening projects for private gardens. "The new post will support the work of colleagues in Science by ensuring the FRF facilities and Deer's Farm are fully maintained", says Head of Horticultural and Environmental Science Paul Alexander. "This will become increasingly important as the RHS develops the facilities and experimentation at the site."

## Other changes

**Andrew Salisbury** has accepted the newly broadened role of Senior Entomologist (with an increased focus on control of plant pests), while **Anna Platoni** has been promoted to Scientist – Plant Health (Entomology). See next issue for news of Anna's replacement. ■



PHOTOS: MATTHEW CROMEY; BARRY PHILLIPS (REBEKAH, KÁLMÁN); MARK CORKE.



## Central role for RHS Perfect for Pollinators in new Government strategy

THE RHS PERFECT FOR POLLINATORS campaign has now been endorsed in the Government's new National Pollinator Strategy.

Launched in November 2014, the strategy was over a year in preparation. As a member of the Pollinator Advisory Steering Group, the RHS worked with Defra and other concerned organisations on the development of this strategy, and will continue to advise and help in its implementation. Under the strategy, the RHS Perfect for Pollinators plant lists are recognised as an essential source of information for the horticultural sector, and the use of the PfP logo on plants for sale is endorsed.

Says Senior Entomologist Andrew Salisbury, who attends the steering group meetings as RHS representative, "It is widely accepted that pollinating insects are in decline. The strategy has many actions which aim to assess the current state of pollinators in England and improve the health of the pollinator population. Any organisation, landowner, or land manager has an important role to play and this includes all gardeners."

The strategy and supporting documents can be downloaded from the [gov.uk website](http://gov.uk), while information on Perfect for Pollinators (including the lists) can be found on the RHS website under [Conservation and Biodiversity](#).

## Major new international conference for experts in plant health, policy and economics

TOWARDS THE END OF 2014, the RHS participated in the International Conference on Global Plant Health Risks and Consequences, hosted in York by the Food and Environment Research Agency.

The event was sponsored by the OECD Co-operative Research Programme and focused on the interface of plant health policy, economics and interdisciplinary science. The conference attracted approximately 70 participants from across Europe, North America, and Asia and provided a UK and international perspective on drivers for future policy-making and the potential for novel and interdisciplinary approaches to improve plant health.

Central to the discussion was the ongoing growth and development of the world trade system, the increase in homogenisation of agricultural systems and the potential influence of climate change.

**Two threats to world *Fraxinus* populations.** Inset. Now recorded on almost 1,000 UK sites, ash dieback was probably introduced from continental Europe with imported saplings. Below. Emerald ash borer (*Agrilus planipennis*), introduced to North America from Asia with packing materials, has already killed more than 50m US ash trees, and is also spreading westwards from the Moscow area.





## Raising the roof at Westminster: a new mathematical model

FOLLOWING A NEW COLLABORATION WITH the School of Mathematics at the University of Reading, an RHS-sponsored student was selected to present a poster of his work at a Houses of Parliament event in February 2015.

With funding secured by the RHS from Reading's Undergraduate Research Opportunities Programme (UROP), in a project which builds on the findings of RHS Senior Horticultural Scientist Tijana Blanuša's research group, mathematics student Thomas Rawson spent six weeks developing a program to determine which plants would best provide particular ecosystem services, given specified constraints.

For example, which plants should be used in a green roof to best cool a small garden office which overheats in the summer? Possible constraints would be the funds available to spend on plants and the average amount of water needed to sustain them.

To resolve the question, Thomas used a mathematical model to establish which combination and proportion of four plant species would provide the optimal ecosystem service results. The model used data from RHS-sponsored research into the impact of differences in garden plant structure and function (temperature, water retention and leaf area indices) on the delivery of environmental benefits. Now the results need to be tested by a field trial; to this end, Tijana will be conducting



The project created a model to maximise green roof cooling when constrained by installation costs. For example, for a notional plot 1.5m square, with a budget of £300, the optimal coverage with the four plants considered was 0% *Heuchera*, 17% *Sedum* mix, 17% *Stachys byzantina*, and 66% *Salvia officinalis*. This method can be easily scaled for greater area coverage, with different constraints and plant species.

an experiment (summer 2015) to investigate three scenarios proposed by Thomas's models.

### What is an ecosystem?

A system composed of the organisms found in a physical environment, interacting with it and with each other.

### What are ecosystem services?

These are the benefits people obtain from ecosystems.

### What services do green roofs provide?

Regulation of immediate temperature and humidity.

### How will this research help gardeners?

In the long term, by providing a model for calculating the best green roof mix for a particular set of conditions.

"This work gives us a tool for planning suitable plant combinations to provide maximum building insulation and aerial cooling, with least inputs," says Tijana. "This is the first step in putting to practical use the understanding of ecosystem service differences between plant species which we are identifying in our research."

Thomas won a joint first prize for a poster display of his findings at Reading's Annual Undergraduate Student Conference. With Tijana and his departmental supervisor, he then presented his work at the [Posters in Parliament](#) event at Westminster on 10 February, as part of the British Conference of Undergraduate Research. ■



# 2014 weather summary for RHS gardens

JOHN DAVID

## Early months

The early months of the year were a continuation of the stormy, wet but mild weather with which 2013 ended. Rainfall in both January and February at Wisley exceeded previous record totals, in 1995 and 1990 respectively. Rainfall levels were also high at Hyde Hall and Harlow Carr, although neither was as high as Wisley's totals. By the end of February, Wisley had received just over 40% of its average annual rainfall. There were two serious storms at Wisley, one on 25 January and a second on 14 February, both with Gale Force 8 winds, which resulted in considerable damage in the garden, especially the

Pinetum. The mildness was exceptional, with February at Wisley being frost free (lowest recorded temperature 1.3°C), the mean daily temperature for that month being almost 2°C warmer than the long-term mean.

## Spring

In March we began to receive Rosemoor's weather data again after a year's gap while the weather station was relocated. Spring proved to have much more settled weather with some fine sunny interludes: for instance at Wisley March sunshine hours were 146% above the long-term average. Temperatures remained above average, in contrast to the long cold spring of 2013. Wisley temperatures were 1.4°C above average in 2014, as opposed to

Above. Barry Phillips downloads the monthly data from the Wisley weather station. The grilled Stevenson screen houses the psychrometer (inset), which shows relative humidity.

2.3°C below average in 2013. Similarly those for Harlow Carr were 1.7°C higher than for the same period in 2013. The warmest period in May arrived on time for the Chelsea Flower Show, when we recorded the highest maximum of 24.9°C on 20 May (though well short of the absolute record of 29.6°C in 2005). March and April were relatively dry, particularly at Hyde Hall but in May the rain returned and for Harlow Carr this proved to be the wettest month of the year, with 136mm (over 5in) of rain falling. While Rosemoor recorded their last frost on 24 March, Wisley had its last frost on 3 May and Harlow Carr on the 14th, the latter falling on the last of the notorious Ice Saints days (11–14 May), traditionally noted for the occurrence of late frosts.

## Annual records for the 4 gardens, 2014\*

Weather event	Amount	Garden
Highest annual rainfall †	1010mm	Wisley
Highest monthly rainfall	150.8mm	Wisley (January)
Highest daily rainfall	37mm	Wisley (26 August)
Lowest monthly rainfall	8mm	Rosemoor (September)
Highest daily maximum temperature	29.3°C	Wisley (25 July)
Lowest daily minimum temperature	-8.9°C	Harlow Carr (28 December)
Warmest month (mean daily temperature)	18.8°C	Wisley (July)
Coldest month (mean daily temperature)	-0.9°C	Harlow Carr (December)

\* Temperature data are not available for Hyde Hall † The total for Rosemoor would probably have been higher than Wisley's, but we lack the totals for January / February.

## Summer

The summer was close to average since although June and July were warmer, August was decidedly colder – in fact so much so that September proved to be warmer on average. July was the warmest month in all gardens, with Wisley recording a maximum



temperature of 29.3°C on the 25th, and Rosemoor 28.7°C on the same day, being the highest maximum temperatures for the year. June was on the dry side across all the gardens, but July was slightly wetter with Hyde Hall recording 118mm (4.6in) of rain. For all the gardens August was the wettest of the season, with all gardens recording over 100mm of rain for the month. And while July was above average for sunshine at Wisley, it was correspondingly below average in August.

## Autumn

The autumn began with a dry, warm and sunny September. It was the driest month of the year for all gardens except Hyde Hall, with Rosemoor receiving only 8mm for the whole

month. However, both October and November were much wetter. The wet conditions, brought on by a succession of tropical storms coming in off the Atlantic also brought mild temperatures with temperatures for the season 1.7°C above the long-term average at Wisley, although temperatures at Harlow Carr were broadly similar to 2013. At Wisley we recorded a maximum temperature of 22.5°C on 1 November, which was a new record high, convincingly breaking the last record of 18.5°C in 2009. Harlow Carr recorded its first frost on 21st September (-1.1°C), while Rosemoor and Wisley had their first frosts in November (24th and 6th respectively).

## Winter

For all gardens except Rosemoor, December proved to be a respite from the rain and at Wisley it was a pleasantly dry and exceptionally sunny month, with sunshine hours 153% above the long-term average. Minimum temperatures were much lower than in 2013 with Harlow Carr reporting -8.9°C on the 28th and a mean daily temperature of -0.9°C for the month. The cold snap in the final week of the year was evident with Rosemoor recording -5.1°C on the 29th and Wisley having -4.1°C on the last day of the year.

## General

Overall 2014 was for Wisley one of the wettest on record. A total of 1010mm fell (39.8in) which was 152% of the long-term average (660mm) and exceeds the previous record in 2000 (958.9mm / 37.75in) by 51mm (an average month's rainfall). Out of the 10

## Century of Wisley weather records now on database

In February, Barry Phillips (Wisley Herbarium; far left) finished databasing Wisley's weather records from 1904 to the present. The data set includes maximum and minimum temperatures, as well as records of rainfall, sunshine and frost.

"Going back through our data shows not only our microclimate, but also longer trends, as well as day to day weather extremes," says Barry. "This ties in well with another long-term climate change research project, apple blossom monitoring, which has gone on at Wisley since the 1920s." (See issue 21.)

wettest years over the last 60 years, 6 have been in the last 15 years.

Totals of 903mm (35.6in; 102% of long-term average) and 957mm (37.7in) were reported for Harlow Carr and Hyde Hall respectively. We do not have a total for Rosemoor as we do not have the data for January and February 2014. It was definitely a warmer year at Wisley; the mean annual temperature was 11.9°C, 1.1°C above the long-term average, and 1.6°C above 2013. By comparison the mean annual temperature at Harlow Carr was 5.8°C, which was actually 0.6°C cooler than 2013. ■

## Acknowledgements

RHS weather data are collected by **Heather Cutmore** (Hyde Hall), **Peter Adams** (Rosemoor), **Peter Fenton** (Harlow Carr) and **Barry Phillips & Rachael Tanner** (Wisley), without whom this report would not be possible.



Left. Maintained by RHS staff on RHS instruments, the Wisley records are independent of the Met Office recording station at Wisley.

## The Kerguelen cabbage



by Saskia  
Harris

HORT TAXONOMY

WHILE SORTING SPECIMENS IN THE Herbarium last year, I came across a plant I had not previously encountered: *Pringlea antiscorbutica* (*Brassicaceae*). The genus is named *Pringlea* in honour of Sir John Pringle, who wrote a work on scurvy.

It turns out the specimen is part of a collection made by the eminent Victorian botanist J.D. Hooker on the Antarctic voyage he made between 1839 and 1843. In his subsequent flora (*The Botany of the Antarctic Voyage* 1: 238–241, 1844) Hooker wrote extensively about the unusual brassica and described the plant fully. “This plant is perhaps the most interesting plant procured during the whole of the voyage performed in the Antarctic Seas, growing as it does upon an island the remotest of any from a continent ... The illustrious Cook [Capt. James Cook] first discovered and drew attention to the ‘Kerguelen’s Land Cabbage’ during his first voyage, when accompanied by Mr Anderson as surgeon and naturalist. The latter gentleman drew up an account of some of the more remarkable plants which he collected there and in other islands, which are preserved in the Banksian library.” It is possible

to see the type specimen collected by William Anderson on the [JSTOR website](#), labelled *P. antiscorbutica*, collected on 24th December 1776, 63 years before Hooker’s first visit. Also on the Wisley herbarium sheet are the annotations “Mus. Henslow” and “ex Herb. Prof. G. Henslow”, and a partially removed stamp “Botany School”. These clues indicate that the Kerguelen cabbage specimen that we have was probably used as a teaching tool by John Stevens Henslow, Darwin’s Professor of Botany at Cambridge, and his son Prof. George Henslow, Professor of Botany at the RHS from 1880 until the First World War. The specimen would probably have been added to the Henslow Museum as a gift through the connection with William Hooker (a friend of J.S. Henslow) and his son Dr Joseph Hooker (J.S. Henslow’s son-in-law).

The Kerguelen cabbage was used as an example in a discussion between Hooker and Darwin in 1844 regarding

Left. The Kerguelen land cabbage, from Hooker’s *The Botany of the Antarctic Voyage* (1844). Hooker reports, “During the whole stay of the ‘Erebus’ and ‘Terror’ in Christmas Harbour, daily use was made of this vegetable, either cooked by itself or boiled with the ships’ beef, pork or pea-soup; the essential oil gives a peculiar flavour which the majority of the officers and the crew did not dislike, and which rendered the herb even more wholesome than the common cabbage, for it never caused heart-burn, or any of the unpleasant symptoms which that plant sometimes produces.” Hover over image to see the Wisley specimen.

a “Vestiges Theory” (letter from J.D. Hooker to Charles Darwin, January 29th): “The presence of some most remarkable plants in several remote isolated spots, staggers all my notions of the migration of species – The Kerguelen’s Land cabbage is found only in that Island & is the most remarkable plant of its whole [Natural Order] in the whole S. Hemisphere there is nothing at all like it any where else; yet almost all the other Kerg. plants are Fuegian [i.e. like those from Tierra del Fuego]”.

The plant takes its common name from the Kerguelen Islands, a French Southern Territory in the southern Indian Ocean. It is the sole member of the genus *Pringlea*, which is currently known from Kerguelen and the Crozet Islands (1,400km to the west). The species epithet *antiscorbutica* refers to its use against scurvy. In more recent times, after many early efforts to obtain and maintain viable seed, the plant has been germinated successfully away from its source. As it contains polyamines of the “antifreeze” kind, it has been used in experiments linked to cold tolerance. ■



## Recent conferences and forums

RHS Science staff attended several conferences and peer networking events towards the end of 2014, with the aim of promoting RHS research and expertise, making new contacts and supporting shared projects. In November **Tijana Blanuša** spoke at the **12th American Green Roof Conference** (Nashville, Tennessee), describing RHS research into the potential of plants to provide building insulation, and the relative contribution of shading, reflection from leaf surfaces and heat loss through evapotranspiration.

RHS entomologists **Anna Platoni** and **Andrew Salisbury** attended the annual **National Biodiversity Network (NBN) Conference** at the Royal Society in November, where a day of presentations focused on the theme “Climate, Collaboration and Collection – informing the new conservation agenda”. Says Anna, “The RHS Science team collect and collate

biodiversity records from RHS gardens, RHS Gardening Advice and [RHS citizen science surveys](#) and share them with the NBN. This was a good opportunity to meet the other stakeholders.”

Anna also attended an event at the Wellcome Trust to hear the results of the **Insect Pollinators Initiative**, [a four-year scheme](#) with funding for nine projects to increase knowledge of insect pollinator ecology, trends and challenges. The day also included presentations on pollinator decline, bee disease, and resource provision in urban areas.

In December, **Andrew Salisbury** attended the fourth meeting of the **Garden Wildlife Health (GWH) Forums**, whose [citizen science project](#) to monitor diseases in Britain’s vertebrates is supported by the RHS. Other participants in GWH include the Zoological Society of London, the British Trust for Ornithology, Froglife and the Royal Society for the Protection of Birds. ■

## Plant science at the European Orchid Show

The European Orchid Show & Conference this year (8–12 April) will include a series of lectures on orchid science, with sessions at Vincent Square and Kew.

RHS International Orchid Hybrid Registrar **Julian Shaw** will be giving two talks. In the first, “Stretching nomenclature: the provision of names in a fecund family”, he will look at how orchid hybrids are named, and consider how the grex system could be improved in orchids, and expanded for use in non-orchid hybrids. In the second, he will speak about the mechanics of orchid registration and discuss why we make lists of plant names. Those interested in attending can register at [www.eoclondon2015.org.uk](http://www.eoclondon2015.org.uk).

Above. *Disa uniflora*. The conference will include talks on several orchid genera, including *Disa* and *Ophrys*.



PHOTOS: RICHARD DAWSON (HOTEL); RHS LINDLEY LIBRARY (DISA).

RHS SCIENCE STAFF WERE RECENTLY ASKED TO ACT AS JUDGES in an online competition as part of [Wild About Gardens Week](#). The Wildlife Trusts and RHS had asked people to provide places in which pollinators can spend the winter, and the subsequent photo competition “[Give a bug a home](#)” attracted over 100 entries. Entrants designed and created insect hotels, gaining marks for innovation, practical features, use of roof space and recycled materials, and general attractiveness. The results were announced in November, with “Btingham Palace” winning the individual category, while the group winner was an education charity in Richmond Park. The schools winner was Whitchurch Primary School in Bristol. Senior Entomologist Andrew Salisbury and Senior Horticultural Advisor Helen Bostock represented the RHS on the judging panel and were impressed by the variety and number of entries. “The amazing standard means there will be many more insects with a good-quality home in the winter,” said Andrew Salisbury when judging was complete. “It was difficult to choose the top hotels for a prize – all entrants deserve a commendation.”

Right. Wisley’s Buzzy Bug Hotel, designed to promote awareness of winter habitats for invertebrates.



## Recent publications by Science staff

**Armitage, J.D.** (2015). Sweet as Honey. *The Garden* **40** (2): 38–40.

**Clover, G.R.G., Denton, J.O. & Denton, G.J.** (2015). First report of Wisteria vein mosaic virus on *Wisteria* spp. in the United Kingdom. *New Disease Reports* **31**: 1 ([www.ndrs.org.uk/article.php?id=031001](http://www.ndrs.org.uk/article.php?id=031001)).

**Culham, A., & Könyves, K.** (2014). The *Cyclamen graecum* group, how many species? *Cyclamen* **38** (2): 70–76 (<http://centaur.reading.ac.uk/38956>).

— (2014). *Cyclamen libanoticum*, a species that knows its identity! *Cyclamen*. **38** (2): 61–63 (<http://centaur.reading.ac.uk/38957>).

**Denton, G.J., Beal, E. & Denton, J.O.** (2014). First report of powdery mildew on *Solenostemon*. *New Disease Reports* **30**: 18 ([www.ndrs.org.uk/article.php?id=030018](http://www.ndrs.org.uk/article.php?id=030018)).

— (2014). *Ilyonectria* species affecting tulip foliage. *Daffodil, Snowdrop and Tulip Yearbook 2014* 80–81.

**Edwards, D.** (2014). Developing a yellow sweet pea. *The Plantsman* **13** (4): 252–254.

**Leslie, A.C.** (2015). *The International Dianthus Register (1983) & Checklist*. 31st Supplement.

**Sansford, C., Beal, E.J., Denton, G., Denton, J.O.** (2015). First report of the rust *Puccinia porri* on cultivated *Allium vineale* 'Hair'. *New Disease Reports* **31**: 4 ([www.ndrs.org.uk/article.php?id=031004](http://www.ndrs.org.uk/article.php?id=031004)).

**Underwood, M.** (2015). *The International Daffodil Register & Classified List (2008)*. 7th Supplement.

**Vaz Monteiro, M.M., Blanuša, T., & Cameron, R.** (2014). Investing in irrigation to maximise the cooling and insulation benefits of plants. *Proceedings of the American Green Roof Conference* (Nashville, Tennessee).

**Zheng, L., et al., incl. Clover, G.R.G.** (2015). Novel genus-specific broad range primers for the detection of furoviruses, hordeiviruses and rymoviruses and their application in field surveys in south-east Australia. *Journal of Virological Methods* **214**: 1–9 ([www.ncbi.nlm.nih.gov/pubmed/25497413](http://www.ncbi.nlm.nih.gov/pubmed/25497413)).

## RHS Science in the media

- In the last *Gardeners' World* of 2014, the team visited Wisley to learn about the fungal diseases found in our gardens. **Liz Beal** identified beneficial and problematic fungi, offering advice on bracket fungus, honey fungus, brown rot and rose black spot.
- **Guy Barter** appeared in the *Sunday Times* (30 Nov) and the *Daily Mail* (1 Dec) commenting on the discovery by scientists that climate change could make flowers more fragrant.
- **Janet Cubey** appeared on Radio Solent's *The Good Life* programme in November, helping out with the gardening Q&A.
- **Guy Barter** appeared in the *Independent on Sunday* (18 Jan), in [an article discussing](#) new scientific research which confirms that lawn care can produce more greenhouse gases than the lawn itself absorbs.



Photos (from top). Tim Sandall; RHS; Bob Martin.

The RHS Science [annual list of the Top Ten garden pests](#) for 2014 once again received widespread media attention, with reports in the *Times*, *Telegraph* and *Daily Express*, among others, and coverage on industry blogs and websites. Encouragingly, this coverage often incorporated or supplemented the advisory text supplied with the press release. The first appearance of **allium leaf miner** (*Phytomyza gymnostoma*; pupae, right) in the top ten attracted interest; first detected in Britain in 2002, the small white maggots of this fly bore into the bulbs, stems and foliage of crops such as leeks, onions, chives, garlic and shallots. The list is based on the number of pest enquiries received by RHS Gardening Advice, which increased by 42% in 2014. The top ten pests account for around 20% of these. ■



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