

Second John MacLeod Lecture

Following the successful launch of the Annual Lecture series last year, this year's talk will be given by Met Office Chief Scientist Professor Julia Slingo OBE. Her topic is 'Gardening in a changing climate', which will draw on the world-leading research carried out by the Met Office. The event takes place on 22nd November, starting at 4:30pm, and will be at Broadway House in SW1.

The Lecture is particularly relevant as it is now ten years since the report 'Gardening in the Global Greenhouse', jointly produced by the RHS, The National Trust and the UK Climate Impacts Programme. Much has changed since then and the RHS is

There is increasing evidence that depletion of ice, in particular in the Bering and Kara seas, can plausibly impact on our winter weather and lead to colder winters over northern Europe.

Julia Slingo, addressing MPs in March 2012

just about to start a research programme to update the report and provide guidance both for planning for RHS gardens, and for UK gardens as a whole.

Before becoming Met Office Chief Scientist in 2009, Professor Slingo was Director of the National Centre for Atmospheric Science and in 2006 founded the

Walker Institute for Climate System Research at the University of Reading, which looks at cross-disciplinary challenges of climate change and its impacts. In addition she has an impressive research record, leading some major research projects in the field.

The Lecture is given to an invited audience of scientists, policy makers and the media, with a number of tickets being made available to RHS members on a first come, first served basis. ■

For more information:

- ▶ johndavid@rhs.org.uk
- ▶ <http://press.rhs.org.uk/RHS-Science-and-Advice.aspx>



Above. The 2002 'Gardening in the Global Greenhouse' report concluded that enhanced autumn colour could extend the visitor season for gardens. Inset. Prof Julia Slingo OBE, Chief Scientist at the Met Office, who will give this year's John MacLeod Lecture.

New climate change research position at Wisley

In collaboration with the University of Reading we have been awarded a second Knowledge Transfer Partnership (KTP) from the UK Technology Strategy Board. This KTP, which will last for 48 weeks, will enable us to scope out the research programme on the impact of climate change on gardening for a larger 5-year post-doctoral fellowship funded by the Spencer Horticultural Trust. The researcher will also survey the public, gardeners and horticultural firms on attitudes to climate change. At the end of the KTP we plan to hold a one-day conference to share our results. Recruitment is under way and the researcher will be based at Wisley.

Climate change will make some crops more difficult to cultivate in the UK.

In brief

NEW BID FOR SOIL SCIENCE FUNDING. In conjunction with the University of Reading and Defra, a PhD funding bid has been submitted to the Biotechnology and Biological Sciences Research Council by **Plant Soil Interactions**. The proposed PhD would examine changes in soil microbiology and soil carbon under the different treatments of the Organic Matter experiment (see p.4).

NEW RHS DOCTORATE PROGRAMME. Senior Horticultural Scientist **Tijana Blanus** (below) has secured funding for a 4-year Engineering Doctorate / PhD programme from the Engineering and Physical Sciences Research Council at the University of Reading's TSBE Centre. Tijana will be supervising **Faye Thomsit**, who starts work in October on a project entitled "Removing the barriers to retrofitting of green walls in an urban domestic setting". Green walls are known to increase energy efficiency, by cooling buildings in summer and conserving heat in cold weather, but are also perceived to be difficult to maintain. The PhD will look at simple management solutions, which will inform RHS advice on the subject.

ADVISORY MANAGEMENT TOOL. Testing of the new system will now begin in the autumn (see issue 13, p.4). It is hoped that it will replace the old AMT during the winter.

PREVIOUSLY UNKNOWN SPECIES OF MEALYBUG.

A root mealybug previously unknown to Britain was received by Wisley's **Plant Health team** in September. It was found by a member on a *Meconopsis* in Scotland. The mealybug expert at Fera has yet to ascertain the species.

Right. *Meconopsis grandis*, painted by Lilian Snelling.



SARAH AL BEIDH, CAROL SHEPPARD (INSET)

Second successful technical internship

Between July and September, the Science Dept successfully hosted its second IAESTE (International Association for the Exchange of Students for Technical Experience) internship. **Sarah Lambrecht** (above), a Biology graduate from Göttingen, spent nine weeks working with **Sharon McDonald** (Hort Informatics) and **Barry Phillips** (Herbarium), with a focus on the genus *Dahlia*, for which the RHS is the International Cultivar Registration Authority. The work included preparing and colour-charting specimens, collating data on dahlia award paintings for the registration database, and collecting material at the National Dahlia Collection near Penzance. On her return to Germany, Sarah hopes to study for a Master's in Plant Sciences. (Inset: Colour-coding *Dahlia* 'Magenta Star').

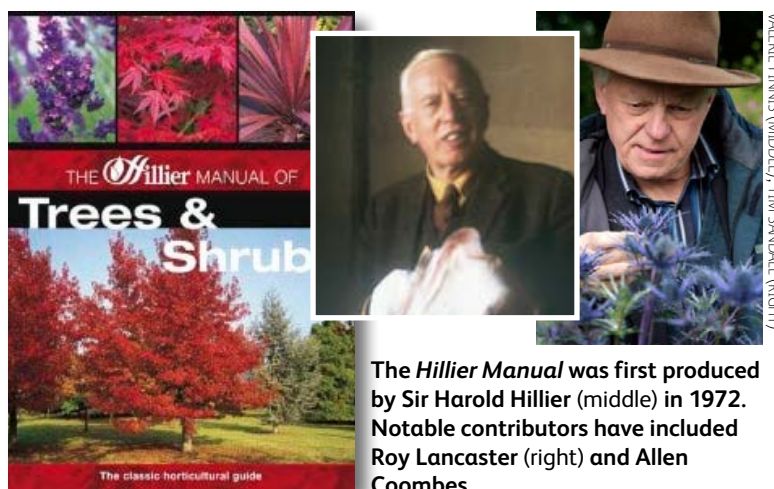
The RHS Horticultural Database passed another milestone on September 12th when Judith Merrick (Compiler, *RHS Plant Finder*) created the 300,000th plant name record. The plant in question was *Allium cepa* (Cepa Group) 'Red Dragon', a new onion cultivar from Thompson & Morgan. The Horticultural Database currently holds plant names from the complete 26-year history of *Plant Finder*, as well as all RHS garden and herbarium accessions, and substantial data sets from wild and cultivated world floras.

RHS Science to revise horticultural classic

The **Botany team** has been asked to produce an updated edition of the *Hillier Manual of Trees and Shrubs*. This has become the standard work on trees, shrubs and climbers in temperate climates, and is used by enthusiastic amateurs and professional horticulturists alike.

Continuously in print since 1972, the *Manual* began life as a catalogue of plants grown at the Hillier Nursery in Hampshire. It was subsequently expanded through six further editions to cover far more plants than were grown in the nursery itself. This will be the first edition produced in collaboration with the RHS and represents a great opportunity to harmonise the plant names in the *Manual* with *RHS Plant Finder*.

The most recent edition of the *Manual* was published in 2002. The RHS Botany team will be checking plant names and updating the taxonomy in line with the RHS Horticultural Database. It is also hoped to expand the work by adding a further 1,000 entries, including new introductions to horticulture and RHS Award of Garden Merit (AGM) plants not previously cited in the *Manual*. The new edition will take into account the results of the current AGM review, as well as incorporating the new RHS hardiness ratings scheme.



The *Hillier Manual* was first produced by Sir Harold Hillier (middle) in 1972. Notable contributors have included Roy Lancaster (right) and Allen Coombes.

Substantial increase in Advisory web profile traffic

Investment of time and resources over the last three winters in updating the advisory webpages appears to be paying off. The nearly 700 web profiles covering “frequently asked Advisory questions” are now receiving about 750,000 page views each month, second only to RHS Plant Selector. Says Chief Horticultural Advisor **Guy Barter**: “This winter we intend to review content and expand information to make the profiles even more relevant to the questions we are asked. Although we have covered the most frequently asked topics, we intend add more profiles where gaps exist.”

RHS resolves long-running daffodil debate

The RHS recently carried out a worldwide consultation on the definition of Division 9 (Poeticus) in the horticultural classification of daffodils, for which it acts as International Cultivar Registration Authority. Division 9 daffodils are late-flowering and fragrant, with white perianth segments. The aim of the consultation was primarily to resolve the long-running question of whether the division should be limited to plants with a red-rimmed and yellow- or green-centred corona, or be widened to include plants with other-coloured centres. The response from 139 international *Narcissus* growers and experts was significantly (66%) in favour of the second option, which has now been publicised worldwide and will take effect from the 2012/2013 registration season.

Right: ‘Saint Petroc’, a typical Poeticus daffodil. (Sally Kington).

For more information on RHS Science news items:

► johndavid@rhs.org.uk

Organic matter experiment: update 2012



by Paul Alexander

PLANT SOILS INTERACTIONS

The organic matter experiment at Deers Farm has just had its crop harvested for the fifth year running, with five more years to go.

The experiment is designed to examine the effects on plant yield and soil quality of repeated applications of the same form of organic matter. This year, each of the eighty 3m x 3m plots has been sown with *Calendula* 'Neon'. At harvest all the plant material is cut and weighed to establish individual plot yields.

From each plot a subsample of plant material is then dried and submitted for tissue analysis to establish if there are any treatment effects coming through in the plant tissue quality.

Soil analysis is undertaken separately from the harvest. Two key elements of this are soil pH

This research will help us improve our advice on how to manage gardens more sustainably – a key element of the RHS Science strategy.

John David

and soil bulk density. Knowledge of any changes in soil pH are important as they will impact upon plant growth. High bulk density tends to indicate compact and hard-to-work soils, while lighter values suggest a soil that is lighter and easier to work.

We are using the large oven in the Field Research Facility to dry all the subsamples before submitting them for analysis. This does mean that the building has taken on a new smell – think wet dog meets egg sandwiches! ■



For more information:

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Above. Ian Waghorn collecting the plant material. Right. The field at Deers Farm before harvesting.

Effect of five years' worth of different treatments	Mean soil pH	Mean bulk density
Peat	5.41	0.54
Composted horse manure	7.35	0.76
Composted bracken	6.80	0.64
Green compost (5cm)	7.46	0.75
Green compost (2.5cm)	7.30	0.91
Composted bark	6.10	0.56
Mushroom compost	7.23	0.73
Bare plot	6.51	1.02

Using the bare plot as a guide to untreated soil, the changes in soil pH show the effect of different treatments (pH 7 = neutral). Lower bulk density (g / cm³) indicates a lighter soil (easier to work).

ALL PHOTOS RACHAEL TANNER

Raising the profile of plant health problems



by **Béatrice Henricot**

PLANT PATHOLOGY

A series of plant health workshops has been organised in RHS and National Trust gardens. The intention is to share knowledge and expertise about plant health issues, and thereby help to prevent the introduction and spread of pests and diseases. The workshops either focus on particular plant health problems such as box blight and *Phytophthora ramorum*, or are more generic and aim to inform gardeners about pests and diseases which are likely to appear but which have not yet become established in the UK.

The first workshop, on box blight, was organised in September at Kingston Lacy, Devon. Representatives of several National Trust properties that had recently suffered outbreaks attended. Talks were given on the disease's history, current research, and control of the pathogen. A plan for managing the disease on the properties concerned was agreed at the end of the day.

Topiary at Kingston Lacy, Devon. Box blight is a particular problem for the Trust.

Another workshop took place in September on *P. ramorum* and *P. kernoviae*. This was organised by RHS, the NT, Fera and ADAS at Rosemoor garden. The aim of the workshop was to share research results on improvement of management practices of both pathogens.

Further workshops will be organised in October at RHS Rosemoor, Wisley, Harlow Carr, RBG Edinburgh and one NT garden. These will aim to inform professional gardeners about a wide range of pests and diseases likely to cause biosecurity issues. By sharing best practice in the workshops, it is hoped that participants will be able to assess the relevance to their garden and improve existing practices accordingly. ■

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New RHS-sponsored research into *Cordyline*

RHS-sponsored MSc student Lucy Wenger has completed her course of study at Reading University and handed in her dissertation, entitled *A Molecular Investigation into Cordyline Hybrids and a Molecular Phylogeny of the New Zealand Species*. Despite differences in gross morphology, ecology and cultivation requirements, the New Zealand species are extremely closely related. Lucy's work has been concerned with trying to find genetic markers which distinguish species and elucidate the parentage of hybrids. Time has been set aside for Lucy to help in preparing her findings for scientific publication. For more information, email RHS Senior Botanist James Armitage (jamesarmitage@rhs.org.uk), who supervised the research.

Left. *Cordyline* 'Sunrise'. Inset. Lucy Wenger, who conducted the research.



Laura Robins, who succeeds Vicki Coupland as Dept Co-ordinator for Science.

Following **Vicki Coupland's** departure in mid September to join Hart Voluntary Action, **Laura Robins** (left; previously Advisory Services Administrator) has taken on the role of Department Co-ordinator for Science, effective 24 September. Laura will continue to provide support to the Advisory team while their support requirements are reviewed. We wish Laura and Vicki the very best of luck in their new positions.

Plant Health in search of mint with a hole

Andrew Halstead (Principal Scientist, Plant Health) led a sustained media campaign in August to raise awareness of a pest new to Britain, the blue mint beetle (below), first reported in

July 2011 by a member in Kent. Beginning with an appearance on [BBC Gardeners' World](#) on August 3rd, Andrew swiftly moved on to *Horticulture Week*, *Garden News*, the *Daily Telegraph*, and several regional papers, as well as Facebook and

Twitter, asking gardeners to submit specimens or photographs for identification. So far, two new records have been confirmed for Ely and one for Fordham, Cambs. The blue mint beetle (*Chrysolina coerulans*) feeds on cultivated mints, unlike its native green equivalent, which prefers wild mints. Says Andrew, "It is capable of causing noticeable damage and it could become widespread."

For more about the blue mint beetle survey:

► apps.rhs.org.uk/advice/search/Profile.aspx?pid=768

For more information about Science publications:

► johndavid@rhs.org.uk

Recent RHS Science publications

Armitage, J.D. (2012). In Defence of Botanists. *The Garden* 137 (9): 21.

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Liston, A. D., Knight, G. T., Heibo, E., Bland, K. P., Barstad, T. E., Blank, S. M., Boeve, J. L., Fieldler, C., Grearson, K. J., Halstead, A. J., Jacobs H. J., Jansen, E., Lonnve, O., Prous, M., Robinson, J. & Taeger, A. (2012). On Scottish sawflies, with results of the 14th International Sawfly Workshop, in the southern Highlands, 2010. *Beiträge zur Entomologie* 62: 1–68.

Salisbury, A. (2012). The future of gardening for wildlife. Box on p 69, *The Garden* 136: 68–71.

Shaw, J.M.H. (2012) Newsletter of the Advisory sub-Committee on orchid hybrid registration. *Orchid Review Suppl.* 120(1299): i–iv.

Whitehouse, C.M. (2012). Warm to the colours of ice, *The Garden* 137(10): 32–35.