

THE JOURNAL OF THE KEW GUILD (CIO)



Founded in 1893

*The Association of members of the Kew staff past and present, and
those interested in furthering the purposes of the Guild*

Events of 2019

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**Royal Botanic Gardens
Kew**

Cover Photos

Front: The Pagoda, at Royal Botanic Gardens Kew

Rear: Top L to R: Orchid Festival 2019, orchids in the Princess of Wales Conservatory, Palm House exterior, Palm House interior - at Royal Botanic Gardens Kew.

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The Kew Guild

Patron: Her Royal Highness Princess Alexandra

Trustees and Officers 2019-2020

Trustees:

Jean Griffin
Stewart Henchie
Harold (Graham) Heywood
Chris Kidd
Tony Overland
David Simpson
Harvey Stephens
Alan Stuttard
Peter Styles

Officers:

President:	David Simpson
President Elect:	Chris Kidd
Vice President (elected 2018):	Graham Heywood
Immediate Past President:	Peter Styles
Consultant Secretary:	Sara Arnold
Voluntary Treasurer:	Linda Baharier
Membership Secretary:	James Richardson
Editor:	Sparkle Ward
Publicity and Promotions:	Jean Griffin

Editorial

We introduced and wrote the first Editorial 44 years ago, and they haven't changed much since! We exhort members to send us their news, for posterity. You can reach us with the click of a computer key! The Journal captures members' history, for posterity.

We are gradually adding info. to the Guild website. Your website. Feel free to contribute to it - just email Secretary Sara Arnold. Under 'Articles' read the amazing exploits of Kewites past - mostly compiled by Alex George in Perth, Australia. Add to it. And read past Award scheme recipients' write-ups that provide results of our financial support to members over the years. We see one of the jobs of the Journal as providing news about Kew, year on year. To that end we precise the weekly Kew and You Kew staff and volunteers' newsletter, with kind permission of Editor Amanda Le Poer-Trench, for your edification. We call it Kew News.

Remember also that by joining the Friends of Kew, Guild members receive a substantial staff discount and receive 3 Kew Magazines each year, and numerous other benefits. Whilst Guild membership dropped after the rise in subscription rates, numbers are on the up again. We suggest that £27 is a small price to pay, not only for your annual Journal, but for reduced membership of Kew Friends with added discounts; application for Guild Awards; meet-ups with fellow members at the Annual Dinner, AGM and other various and varied events during the year. Urge your colleagues to join.

As ever, we particularly thank Secretary Sara Arnold; News of Kewites Pamela Holt; Obituaries Graham Burgess; proof-reader Alex George and Kew's Director Richard Deverell; and others – volunteers without whom... your Journal would be a lot slimmer and of much less interest. Enjoy.

As we put this edition together ready to go to our printers in early April, and bearing in mind the Coronavirus started in December, we salute all Guild members who are involved in all leisure, scientific, and the wider horticultural aspects of society during this unsettling time. We wish them, and all Guild members, a safe future.

Please write in to tell us about your professional and personal experience of the effects of Covid-19 and we will hope to put it to print in the Events of 2020 Journal.

Floreat Kew.

Sparkle Ward
Richard Ward

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Advisory Editor

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Sara Arnold
Linda Baharier
James Richardson
Brian Phillips
Jean Griffin
Chris Kidd
Pamela Holt

David Simpson President 2019/2020



Dave 'retired' from Kew in October 2015 after a 30-year career in the Herbarium and has since been an Honorary Research Associate, currently spending one to two days a week in the Herbarium. He was born in Lancaster but grew up just outside Preston; he is very proud of his northern roots and never intended to live over half his life in the south. It was a very suburban upbringing but he developed early interests in plants, the countryside and nature conservation, partly through Typhoo tea cards of British wildflowers which he collected when he was eight or nine years old.

After leaving school in 1974 (he had to repeat A-levels), Dave went to Bangor University, initially to study Forestry. However, he quickly realised that he really wanted to be a botanist and persuaded the university to let him do a joint degree in Forestry and Botany. He was awarded a BSc in 1977. During the summer holidays he obtained some horticultural/landscaping experience working as a groundsman at the Lancashire Police HQ near Preston. Unfortunately, in his first summer he managed to kill the grass outside the Chief Constable's office by being rather too generous with the weed killer, so he was very surprised that they employed him again the following year. It's probably a good job he stayed with botany...

After Bangor, Dave moved south to Reading University, graduating with an MSc in Plant and Fungal Taxonomy in 1978. He then went back north to Lancaster University, working part time as a curator in the university's herbarium while doing a PhD, which he received in 1983, on the taxonomy and ecology of invasive pondweeds (*Elodea* spp.) in the UK and Ireland. Prior to that he had written to the then Keeper of the Herbarium (and a previous President of the Guild) enquiring whether any jobs would be available at Kew but was told that nothing was available due to budget cuts. So, early 1984 saw him heading to Ireland to take up a postdoctoral research fellowship at Trinity College Dublin, working on the taxonomy of Irish birches. He settled in Ireland very quickly and met his future wife Rose there. However, in April 1985, 18 months after the start of the postdoc, two Taxonomist posts were advertised at Kew and with some reluctance he applied. To his continued astonishment, he was offered one of them (receiving the news in a letter delivered by helicopter in Greenland - but that's another story). It was a wrench to leave Dublin but eight months later Rose joined him at Kew, where she still works. His subsequent career saw progress through the ranks to Keeper of the Herbarium but, following a major restructure of the Science departments in 2014, the Keeper role was abolished and his final role before retirement was Head of the newly established Identification & Naming Department.

Dave's research interests at Kew have been focused on the taxonomy of Monocotyledons, especially Cyperaceae (sedges). He has published extensively on this family, discovering and describing many new species. Working at Kew affords wonderful opportunities for travel and Dave has been lucky enough to visit every continent except Antarctica. His work at Kew has particularly focussed on Southeast Asia, with Thailand being a major focus. The opportunity to visit and work in this region, with like-minded colleagues many of whom have become lifelong friends, has been another of the joys of working at Kew. Much of Dave's later career involved management of staff and financial resources, which

brought its various challenges and rewards. Retirement has allowed him to return to botanical research and current projects include *Grasses for the Flora of Thailand* and *Sedges for the Floras of Singapore, Peninsular Malaysia and Cambodia, Laos and Vietnam*. He has also been involved in teaching and graduate student supervision including 24 PhD students. Beyond Kew, Dave has been an EU-funded visiting professor at Trinity College Dublin, Visiting Professor at Khon Kaen University (Thailand), Adjunct Professor at the University of New England and visiting lecturer at Reading University. He has been a member of numerous boards and committees and chaired a fair few. Currently, he is a Visiting Research Fellow at Trinity College Dublin, an Editor for the *Flora of Thailand*, an Associate Editor of *Kew Bulletin* and on the editorial boards of several other journals including *Thai Forest Bulletin*. Other interests include birdwatching, astronomy, archaeology, walking, vintage railways, and of course, his family. He enjoys gardening but his horticultural skills are more attuned to gardening of the wildlife kind. Dave considers it an honour and privilege to be President of the Kew Guild, and believes the Guild is a force for good, uniting past and present Kew staff and students, wherever they are in the world.

Chris Kidd President Elect

Prior to writing this report I've been looking back at my involvement with the Kew Guild since joining in 1990. In my early years as a student I was lucky enough to be awarded a travel scholarship, and assisted by an Award from the Kew Guild, travelled to Sweden. Kew, and the award that enabled my travel, proved to change the direction of my career. In gratitude I determined that I should return the favour by giving time to the Guild, which so far has manifested as hours of travel on ferries and the A3 to attend meetings. In the role of Secretary to the Awards Committee, and for the last few years as its Chair, I've been part of the team that has made awards on the Guild's behalf. As the Guild transferred to a CIO I felt I could help further and agreed to become a Trustee, if only to help meetings become quorate, but this has proven to become more encompassing as the Guild is increasingly active and busy. The greatest honour was receiving nomination for the Presidency, serving this year as President Elect.

The Kew Guild has a huge opportunity to grow beyond the organisation that has served us since 1892. I'm impressed with the resolution and effort supplied by the other Trustees to drive the Kew Guild into directions hitherto hinted at. We may have seen early fruit with the success of the Apprentice/Trainee 'Discovery Day' held at Royal Botanic Gardens Kew on 22nd November 2019. This initiative by Honorary Fellow Mike Fitt was supported by the Kew Guild and greeted nearly 200 young people to the opportunities of our professional industry. In a single event we helped more people than perhaps ten years' worth of our usual awards. Amongst our membership we have an almost unparalleled skillset we should be proud of, our constitution should allow us to use these skills not just to the benefit of our current membership but future members too. We should become more closely entwined with our botanic alma mater, I see evidence of this which must be supported. Though financially secure, we should plan for the future and grow proportionately with increased expenditure. I share the ambitions of our Trustees and look forward to our next year together.



Chris Kidd, right and Liz Walker

Minutes of the 2019 Annual General Meeting of The Kew Guild CIO held on Saturday 7th September 2019 in The Lady Lisa Sainsbury Lecture Theatre, RBG Kew, at 2pm

Attendance:

Trustees:

Peter Styles (President)	Stewart Henchie
David Simpson (President Elect)	Harold (Graham) Heywood
Jean Griffin (Immediate Past President)	Tony Overland
Chris Kidd (Award Scheme Chairman)	

Officers:

Sparkle Ward (Editor)
Janette Ames (Archivist)

Members:

Jenny Edmonds	Brian Pitcher
Mike Fitt	Veronica Priestley
John Gaggini	Marcus Radsheit
Harvey Groffman	Martin Sands
Judy Hancock	Martin Staniforth
David Hardman	Harvey Stephens
Pamela Holt	David Taber
Bob Ivison	Richard Ward
Colin Jones	Mike Wilkinson
Jill Marsden	Tom Wood
Jim Mitchell	Joan Woodhams
Brendan Mowforth	Leo Pemberton
Sylvia Phillips	

Guests:

David Edmonds	Liz Styles
Jan Overland	Chantal Taber
Brian Phillips	Davina Wood
Wendy Staniforth	

CIO 2019-20.001

Welcome by the President

The President welcomed everyone to the second Annual General Meeting of the Kew Guild CIO.

CIO 2019-20.002

Apologies for absence

Trustees:

Alan Stuttard, Tim Upson (he will be attending the European Garden Heritage awards at which the RHS has been nominated).

Committee:

Sara Arnold (Consultant Secretary), Linda Baharier (Voluntary Treasurer), David Cutler (Kew Guild Medal), Silke Strickrodt (Student representative).

Members:

Sonya Abraham	Allan Hart	Reg Leach
Mike Clift	Joan Hart	Trevor Matthews

Blaise Cooke
Raymond Evison
Tricia Fisher
Hugh Flower
Jenny Grundy

Carol Hart
Stan Hitt
Bryan Howard
Mike Griffin
John Isaac

David Morgan
Simon Owens
Anna Pavord
Rod and Jean Peach
Jonathan Rickards

The President opened the meeting at 2.05pm. There were seven Trustees and 26 voting members present at the meeting.

CIO 2019-20.003 Notice of death of members

Members who passed during the 2018-19 Guild year are:

Robert Adams, Ian Beyer, Andrew Barnes, David Frodin, Esme McCulloch, Hans Overeynder, Valentine Tynan and Jeffrey Wood (who was not a member but worked at Kew). Members present stood for a minute's silence in honour of those passed.

CIO 2019-20.03a Minutes of the previous AGM

These have been sent out to members earlier in the year prior to their appearance in the Journal as requested by Allan Hart. This would continue to take place in the future. There were no matters arising from the minutes that would not be dealt with later in the meeting.

Proposed: Leo Pemberton. Seconded: Tom Wood. There were no objections or abstentions. Decision: Report approved.

In the absence of the Secretary, the Minutes of the 2018 AGM will be signed at the October 2019 meeting for the official records.

CIO 2019-20.004 Consultant Secretary's report – Sara Arnold

The President explained that Sara would be unable to attend the meeting due to transport problems whilst on her way. Sara's report had been sent prior to the meeting.

The Kew Guild CIO met five times during 2018-19. Meetings were well attended, and the meetings were quorate in accordance with the new CIO (three or one quarter of trustees). It has been a privilege to work with Peter, and we have really moved forward with the handbook, copies of which will be available at the meeting.

Meeting dates (confirmed with the availability of main officers and the Guild room) for the new committee: Monday 7th October, Wednesday 11th December, Wednesday 19th February 2020, Thursday 23rd April and Thursday 23rd July.

Proposed: Colin Jones. Seconded: Graham Heywood. There were no objections or abstentions. Decision: Report approved.

CIO 2019-20.005 Volunteer Treasurer's report – Linda Baharier

Linda has been in hospital but from her bed has been busy preparing the accounts for signature at the prior meeting of the Trustees of the old Guild for presentation at the CIO AGM.

Proposed: Pamela Holt. Seconded: Graham Heywood.

CIO 2019-20.006**Acting Membership Secretary's report – Sara Arnold**

Membership as at 27th August 2019

Membership Type		2019	2018	2017
Standard	Kew Staff	40	35	40
	Other	240	219	224
Kew Students		37	35	37
Library		1	1	1
Life		1	2	3
Honorary	Fellows	17	16	17
	Members	3	1	3
Total		339	309	325

We do have a possible new Membership Secretary but this has not been finalised yet.

- New standard members 2018 – 2019
- Staff: 5; Other: 21
- Returning lapsed members – 3
- Antony O'Rourke, Julie Risely, Harvey Stephens
- Honorary Fellows – 17
- Resignations – 1
- Life Members

1 current life member: Eric Grant, Windsor, at Kew 1947 – 1948

- Students – 11

Orla Elliston, Owen Griffiths, Michael Leach, Luigi Leoni, Fionnuala McDermott, Mira Nubold, Charles Shi, Ignacio Silva de la Iglesia, Matthias Spall, Tim Stafford, Silke Strickrodt.

- Deaths

Seven deaths, as already stated.

Proposed: Stuart Henchie. Seconded: Martin Sands. There were no objections or abstentions. Decision: Report approved.

CIO 2019-20.007**Events Co-ordinator's report – Brian Phillips**

There were four events in the year, plus the Annual Dinner. While the Colesbourne Park visit was popular the responses for the two weekend trips in June and July were exceedingly disappointing. To make both visits financially viable local friends had to be invited to top up the numbers.

The unfortunate effect of this lack of interest may influence any members who are considering organising an event in 2020. In all cases the break-even cost point had been set with fairly low numbers e.g. if maximum was 20 then break-even would be set at typically 16.

Online banking became available in the year which meant that Linda and I could rapidly check incoming payments. Similarly, payment of the organiser's expenses was now very rapid.

Overall the Events showed a surplus of £138 which has been added to the Guild's funds.

Events (actual)

Colesbourne Park, 16th February – led by Alan Stuttard.

Snowdrop Garden, 26 attended – very good response. Financial surplus £34

Rockcliffe and Highgrove, 11th – 12th April – led by Peter Styles. The event was only published on the web site and not via CIVI to the email list. It was a bit of a struggle getting the numbers. From the committee and via word of mouth, the numbers eventually reached: Rockcliffe – 20, Highgrove - 24. Financial surplus £19.

Gardens of South Hertfordshire, 8th – 9th June – led by Bob Ivison. By end of March only 8 had registered. Bob arranged to invite friends to make the events viable. Two reminders were sent out via CIVI which resulted in more members joining. Attendance was: Saturday - 27 of which 5 were friends, Sunday - 25 of which 7 were friends. Financial surplus £34.

Down House, Ashdown Forest and Millennium Seed Bank, 6th – 7th July – led by Sylvia and Brian Phillips. Again a slow response. After sending reminders the events became financially viable. Attendance was: Down House and Ashdown Forest – 19, Millennium Seedbank – 15, of which 2 were friends. Financial surplus £51 (high figure due to Down House insisting their maths was right – it was not!)

Future of Events.

As stated in the Summary the response to Events has been very varied, but on the whole poor. We have tried to make the flyers advertising each event as exciting as possible, but that has still not attracted members. Most of the Events, to my non-botanical, non-horticultural mind, have sounded attractive and varied. Those who took part have without exception praised the organiser and the variety and interest in the Events. Which leaves unanswered - what future for Events in 2020?

The President mentioned that Martin Staniforth had assisted with the organisation of the Highgrove visit.

Tony Overland felt that attendance numbers were typical of previous years and asked if any surplus funds were being put into the main Guild account or being kept separate in case of future losses. The President felt sure that any surplus went into a separate account but this would be confirmed with the treasurer.

Proposed: Leo Pemberton. Seconded: David Simpson. There were no objections or abstentions. Decision: Approved.

CIO 2019-20.008

Editor's report – Sparkle Ward

The Events of 2018 Journal was published in time for the Kew Guild Dinner on 22nd May 2019, at £4,485 (including book proofs) for 500 Journals including printing and Editors fee, plus extra costs for envelopes and postage. There were 12 extra pages. The cost of the 2016 Journal comparatively was £4,220 and the 2017 Journal £4,440. Thanks are given to contributors and others for their voluntary input, including Alex George for Botanical proof reading, Graham Burgess for Obituaries, Pamela Holt for News of Kewites and also to Sara Arnold as Secretary.

Myself, Richard Ward, Sylvia Phillips and David Simpson recently sorted and updated the Journal stock in the Guild Room - we now have at least 10 copies of each Journal from the last 5 years, and 3 from each year previously (where available).

I invite Guild Members to make suggestions for the cover of the Events of 2019 Journal to me by 30th December 2019. Please could Guild Members send in their News of 2019 and if you have any ideas for articles please get in touch in advance to agree/secure space.

Pam Holt asked if the Journal had to remain the same size or if extra pages could be added.

Sparkle explained that the Journal usually consisted of 116 pages and if more were required then the committee was asked for approval. Additional pages had to be purchased in multiples of 8 or 12.

Pam asked if it would be possible to print pictures larger as some were very difficult to see. Sparkle said that due to the software used images could only be inserted into the text at the last minute as text did not automatically move around and this was very time consuming to do by hand. She usually knew by December the amount of copy which was going to be received but there were occasional submissions after Christmas. 80% of the Journal consisted of required information such as minutes and reports but it may be possible to make images larger in some cases.

Jean Griffith thanked Sparkle for all of her effort and there was a round of applause.

Proposed: Judy Hancock. Seconded: Graham Heywood. There were no objections or abstentions. Decision: Approved.

CIO 2019-20.009 Award Scheme report – Chris Kidd

The KGAS met on Thursday 7th March 2019 at 4pm and Thursday 11th July 2019 at 4pm to consider applications for awards and the nomination for the Honorary Fellowship.

Present in March were Chris Kidd (Chairperson and acting Secretary), Allan Hart, Gillian Leese, Rebecca Lane (student), Silke Strickrodt (student) and Jean Griffin (Past President of the Kew Guild - observing). Apologies from: Marcella Corcoran (Secretary), Susyn Andrews, David Hardman, David Simpson, Sal Demain and Peter Styles.

Present in July were Chris Kidd (Chairman), Vanessa Barber (Secretary) Marcella Corcoran, Allan Hart, Peter Styles (President) David Simpson (President elect), Susyn Andrews, Gillian Leese, Rebecca Lane, Silke Strickrodt, Sal Demain, Richard Wilford. Apologies from: Linda Baharier, David Hardman.

Awards

A total of £13,012 from the five named Funds and General Funds was available at the meeting to be made as awards. Eight applications had been made, all were successful after individual discussion.

Andrew Luke, Research and collection in Vietnam, Awarded £900 from Redman Fund

Richard Baines, Research and collection in Vietnam, Awarded £900 from Redman Fund

Faye Adams, Study tour in Armenia, Awarded £688 total, £500 from Leese, balance of £188 from General Funds

Katarzyna Babel, Study tour in Korea, Awarded £1153 from Dallimore Fund

Maud Verstappen, Study tour and research Armenia, Awarded £750 from Dallimore Fund

Orla Elliston, Study tour and research Armenia, Awarded £750 from Dallimore Fund

Olwen Grace, Study tour Kenya, Awarded £592 from General Funds

Steven Robinson, Purchase moth trapping equipment, Awarded £462.50 from General Fund

Of a total fund availability of £13,012 for 2019, £6,195.50 was awarded.

Award Withdrawal

Following the awards being made, one awardee honourably notified the Chair that the purpose of the award had significantly changed. The award (£750) was consequently withdrawn. The value of the award was therefore available alongside the remainder of

funds (£6816.50) from the March meeting.

Fellowship of the Kew Guild

One Honorary Fellow's Nomination was received, made by Allan Hart. After discussion the Committee decided to support the nomination. It was felt that Tim O'Hare offered a strong knowledge and experience beyond the regular membership of the Kew Guild and had potential for the furtherance of the Kew Guild's aims.

The Awards Committee thereby proposed to the President and informed the Trustees that Tim O'Hare was to be elected as Fellow of the Kew Guild. The President was pleased to report that Tim O'Hare has accepted and will attend the annual dinner in 2020 to accept the award formally.

Awards – JULY

A total of £7566.50 from the named Funds and General Funds was available at the meeting to be made as awards. Four applications had been made, all were successful after individual discussion.

Shahina Ghazanfar, Herbarium visit for Flora of Iraq/Austria/7 days, Awarded £800 from Turner Fund

Felix Merklinger, Study the genus *Eulychnia*/Chile/4 weeks, Awarded £1427 total. £1352 from General Funds and £75 from Redman Fund.

Orla Elliston, Study tour and research Georgia, Awarded £750 from Dallimore Fund

Ana Oliviera, Bullfinch conservation/Azores/4 weeks, Awarded £2000 total. £500 from Ian Leese Fund, £602 from Arnold Fund, £498 from Redman Fund.

Of a total fund availability of £7566.50 for July 2019, £4577 was awarded, leaving £2989.50 remaining.

George Brown Memorial Award

One nomination was received from Allan Hart for the George Brown Memorial Award, this nomination will be discussed at the March meeting in 2020. Award to be made at Kew Guild dinner 2020.

Chris mentioned that Vanessa Barber had agreed to take over as secretary from Marcella Corcoran. Tim O'Hare, the recipient of the Fellowship of the Kew Guild, had publicised his award in the landscape press so gaining the Guild valuable coverage.

Richard Ward asked whether the committee were happy with the number of award applicants. Chris said that he would delighted to give away all of the money each year if there were sufficient applicants and he hoped to be able to grow the awards with wider publicity. Some awards were very specific and could not always be awarded as projects did not meet the required criteria. It was felt that there had been a wider amount of applicants outside of the student body which was encouraging.

Bob Ivison would be pursuing local schools and Tony Overland was looking at ways of working with school students to facilitate their career paths. These new initiatives would be looked at in the New Year.

Proposed: Martin Sands. Seconded: Bob Evison. There were no objections or abstentions. Decision: Approved.

CIO 2019-20.010

President's report – Peter Styles

This has been our first full year of the new CIO. Building on the enormous work and commitment of our previous Presidents and Advisors we are now in a very robust position

and able to move forward with new vigour and initiatives. There are many of my predecessors to thank for this but, in particular, Jen Alsop, who has given her time with such generosity for which I am eternally grateful. Jean Griffin handed over to me last September a structure that enabled me to maintain our important aims but operate in a legal and efficient manner. Thank you Jean!

Our metamorphoses therefore to the new CIO are now almost complete with just a few administration matters to deal with in relation to the Deed of Appointment. Although it may not be too evident that your Guild has changed very much in the last year there has been much behind the scenes activity from the Trustees.

The services of our Charity Lawyer Tom Pratt have also been retained to provide us with the last few bits of charity law advice. Tom has now confirmed that The Charity Commission has now received the new Constitution (as amended September 2018) and has updated their records to the register. The Commission has also agreed to retain the Old Guild as a shell charity on the register to enable us to administer our legacies until such time that they can be transferred to our new CIO.

Awards and Grants. This is one of our key objectives and as you will have seen from the Awards Scheme committee report, that under the chairmanship of Chris Kidd, we have awarded a total of £6,195.50 to eight successful applications from an available total of £13,012.00.

You will have read in my previous newsletter that we are proposing a new grant award to schools which we will trialling shortly this year. This will be a fine example of the way in which the Guild is extending its charitable activities in line with our new constitution. Tony Overland has agreed to pursue this new initiative on our behalf with the help of a sub-committee. We are also looking at a joint 'master class' initiative with the Royal Parks and Kew Gardens. This is an initiative suggested by our Honorary Fellow Mike Fitt. Details will be announced to the membership in due course.

The George Brown Memorial Award this year will be awarded to Chris Kidd for his unstinting commitment to the Awards Committee. Chris will receive the well-earned Award at our next Annual Dinner. The Kew Guild Medal this year was awarded to Laurie Olin, the international landscape architect. Laurie was unable to accept the medal at our Dinner, but it is hoped that he can receive the medal at a special presentation when he next visits the UK from the States. After many years of service to the Kew Guild Medal, David Cutler will be stepping this year down from his position as KGM organiser. A huge thank you to David for his time over the years and we will ensure that the KGM continues as one of our important awards. David would like to receive medal nominations for next year.

Membership and Subscriptions. The membership for 2019 is a total of 339 members which is very encouraging. New applications were received from Guild members wishing to re-join, Kew Students and individuals from outside of Kew. We are slowly rebuilding our membership base after losing some members from the subscription changes in 2016. Our new membership form has undergone changes and we now have a form which we are all happy with and which complies with the Charity Commission requirements. The Trustees are assessing all new applications very carefully to ensure that the aims and objectives of the Guild are maintained to the highest standards and in line with our new constitution. The membership fees remain fixed for 2019 but we may need to consider a small increase next year to keep abreast of inflation and avoid the large increase seen in previous years.

Events 2019. My thanks to Brian Phillips for the enormous amount of time he spent coordinating the programme of four successful events for year, starting in February with

a very well attended Snowdrop extravaganza at Colesbourne Park, organised by Alan and Di Stuttard, and finishing in June with a 'behind the scenes tour' of the Millennium Seed bank at Wakehurst and a trip to Ashdown Forest where we experienced amongst other things the birth place of 'Winnie the Pooh'! Well organised by Brian and Sylvia Phillips.

In April we visited the Rockcliffe and Highgrove gardens where we were shown around by Their Royal Highnesses' head gardener Debs Goodenough and the Rockcliffe owner, Emma Keswick. We were privileged to have a behind the scenes tour of Highgrove. Thanks to Martin Staniforth for the Rockcliffe event.

June saw us in some fine Hertfordshire Gardens. A superb weekend organised by Bob Ivison and where we visited three wonderful gardens and estates and enjoyed a well-attended dinner at the Pied Bull.

We often worry about the numbers of members and guests attending these events, but I can say that 20-25 is an achievable number and certainly this year, despite a few minor glitches, these numbers have been achieved. The finance arrangements for these events is much more efficient with our new BACS system in place. We are currently looking at the 2019-2020 programme now so suggestions please to David Simpson our President Elect.

In May we held our very successful Annual Dinner at Cambridge Cottage. Based on the 'lighter' format of the previous year the meal was magnificently organised by Tony Overland with Jean Griffin as our 'Mistress of Events'. The Diploma Students organised a wonderful raffle with nearly 50 prizes. Our guest speaker was Helen Tranter, Vice President of the Landscape Institute, who talked about the collaborative work of the Institute.

Many remarked that it was one of the best dinners that they had attended for a long time so my personal thanks to all those who contributed to make this event so special. Tony has kindly agreed to organise our next Annual Year on Thursday 21st May 2020 at Cambridge Cottage, Kew and we all look forward to another successful dinner. Reports and details of all events, together with photographs, can be viewed on the website.

Kew Diploma Students. We have a good relationship with the students and Jean Griffin continues to provide invaluable support at the Kew Mutual Society events. We are working towards a closer relationship with the School of Horticulture as many of the students may become future members. As your President I attended the Director's lunch at the Diploma students prize giving and graduation event yesterday. I will also be presenting, with David Simpson, to the new cohort of Kew Diploma and KSC students on 23rd September.

It has been a great honour for me to be your President this year and I wish David Simpson every success in continuing the work of The Guild and its new initiatives. Finally I would like to thank my fellow Trustees and Committee members, together with a special thank you to Sara Arnold and Linda Baharier for their terrific support over the year.

Archives. The Archivist report is not part of CIO AGM proceedings, but we have a new Archivist, Janette Ames, who has done a great job in the short time she has been with us, carrying on the splendid work of Astrid Purton who was not able to continue in the post. Janette's annual report is below:

Since taking up the post of archivist liaison officer earlier this year, I have completed the first tranche of the photograph conservation project which involves repackaging the photographs in archival presentation binders. This will ensure easier handling and long-lasting protection for the photographs which date from the late 19th Century and are very popular with researchers. Using the photos and other information in the archive we were

able to assist Swansea Botanical Gardens in their research for their centenary celebrations. More about this on a blog I have written for the Guild website. Photographs are now received almost exclusively in digital format which presents a different set of challenges for the archive. I am working with Sparkle Ward and Kew Gardens Archive to achieve the best way of documenting and transferring them for digital preservation. As many of the photographs for the Journal now come to Sparkle in digital version, a new online copyright submission form has been proposed for ease of text and photograph submission by members. It is currently under consideration in relation to costs.

Although the Guild Archive holds the records of the business of the Guild, any other personal papers of historical value connected to members' time at Kew are welcomed if they are happy to donate these. It is important to note though that once information is legally transferred to Kew, this information will be available for public view in the Archive. Thank you to everyone on the committee who has supported me in my new role, especially Sara Arnold, Stewart Henchie, Sparkle Ward and Richard Ward.

Proposed: Richard Ward. Seconded: John Gaggini. There were no objections or abstentions. Decision: Approved.

CIO 2019-20.011 Result of Prize Day

The President reported that it had been a good day with excellent speakers and the Director had mentioned in his speech the relationship of Kew students around the world. Notably, one of our active Student Representatives, Sal Demain, gained the following 8 prizes: The Matilda Smith Memorial Prize (Kew Guild sponsored), The George Conrad Johnson Memorial Prize, The Fred Larkbey Cup, The F. Nigel Hepper Cup, The Worshipful Company of Gardeners' Prize, the Kew Gardener Prize, the Donald Dring and Gilbert Memorial Prize and The Squares Garden Centre Prize.

Kew Guild sponsored awards

The George Brown Prize – Tristan Agates

The Kew Guild Individual Study Prize – Tristan Agates

The CP Raffill Prize – Alison Leg and Andrea Topalovic Arthan

The Dummer Memorial Prize – Tristan Agates

The Kew Guild Cup – Richard Choksey

The final year students had made a film of their year at Kew which will be shown at the end of the meeting. PS commented that it was very encouraging to see the students enthusiasm and noted the Guild's contribution.

CIO 2019-20.012 Annual subscription rates

Subscription rates will remain at £27 for Ordinary Members and £15 for Students. David Taber mentioned that as the Guild was now a charity, members could deduct their subscription from their accounts. Tony Overland said that it was hoped that the Guild would be able to sign up to GoCardless for direct debit collection; this would remove the need for standing orders. The President mentioned that there would have to be a consideration of a possible small subscription increase in 2020 to avoid the need for larger rises as the previous one had cost the Guild over 100 members.

Proposed: Jean Griffin. Seconded: David Simpson. There were no objections or abstentions. Decision: Approved.

CIO 2019-20.013 Retiring Trustees

Our Constitution requires us to replace Trustees every year on a three-year rota, but this year is a little more difficult as all Trustees commenced in 2018. Trustees have all agreed

to stay on for another year, apart from Tim Upson, who has stepped down due to his RHS commitments. We therefore have one position to fill this year from nominations received from members at the AGM. Our byelaws allow us to nominate, vote and appoint new Trustees at the AGM but not positions of President or Vice President - these positions are discussed and agreed by Trustees at Board meetings. Therefore I propose the following:

Retire AGM 2020

Stewart Henchie, Alan Stuttard, Graham Heywood

Retire AGM 2021

Jean Griffin, Tony Overland, Peter Styles

Retire AGM 2022

David Simpson, Chris Kidd, TBA (2019 appointment)

Of course, we can reappoint Trustees or Trustees can resign but we will need to appoint new members to provide enough nominations for the ongoing President and Vice President positions.

Proposed: to accept all nominations: David Simpson. Seconded: Martin Sands.

CIO 2019-20.014

Nomination of Trustees

Sara Arnold has not received any nominations from the general membership for trustees for the year 2019-20 – the nomination forms were posted out with the Notice of AGM, although one of our newest members, Sonya Abraham (of Imperial College with an interest in clinical pharmacology and the use of plants in medicine) has expressed an interest in what the role involves.

There has been one formal nomination of Harvey Stephens. Sara Arnold to do relevant checks and report back. Chris Kidd nominated Robert Brett, curator of RHS Garden, Hyde Hall. The President said that following discussions Richard Barley, Director of Horticulture, Learning and Operations at Kew had also agreed to stand. This would be a very good nomination as it would cement the relationship between the Guild and Kew which had been lost in the latter years.

Proposed (subject to relevant checks): Peter Styles. Seconded: Chris Kidd. The proposals were carried unanimously by the floor.

CIO 2019-20.015

Election of Officers

With our new CIO Byelaws we do not require President/Vice President nominations to be agreed by the membership at the AGM, it is a matter for the Trustees.

The Committee for 2019-20 is as follows:

President	David Simpson (from President Elect)
Vice President	Graham Heywood
President Elect	Chris Kidd
Immediate Past President	Peter Styles
Hon. Treasurer	Vacant
Voluntary Treasurer	Linda Baharier
Hon. Secretary	Vacant
Consultant Secretary	Sara Arnold
Hon. Journal Editor	Vacant
Editor	Sparkle Ward
Hon. Membership Secretary	Vacant
Acting Membership Secretary	Sara Arnold

Archives Officer
Kew Gardens Representative

Janette Ames
Vacant

Proposed: Leo Pemberton. Seconded: Tony Overland. There were no objections or abstentions. Decision: Approved.

Richard Ward commented that there were only 3 ex-Kewites on the list, all the rest were outsiders. Richard asked whether it was too much for members to find some time to serve on their committee. Sylvia Phillips mentioned that the membership database was too complicated and this was putting off prospective membership secretaries. It does not contain all of the members and there are currently 36 members without email addresses. It was agreed to look into possible alternatives.

Harvey Stephens commented that membership had risen by almost 10% in the last year and he wondered whether there was a reason. It was explained that the membership had been much larger but the increase in subscription had caused many to resign and it was hoped that this trend was now on the way up again. However, a membership secretary was needed to manage the members.

CIO 2019-20.15a Any Other Business

Martin Sands mentioned that Pat Halliday had died during 2019. Although Pat had not been a Guild member, she had worked in the herbarium from the 1940s and would have been known by many Kewites. Leo Pemberton commented that the speaker at Prize Day, Alan Lewis, had mentioned being mentored during his time at Shropshire Parks Department by Bryan Howard. Leo said that unless members took an interest in youngsters the Guild would lose numbers and eventually fade away. It was suggested that an alumni be created. Chris Kidd said that he had been in discussion with Richard Barley concerning an alumni and it had been pointed out that the Kew Guild was already set up. The Guild needed to play a stronger role in developing people coming into Kew in the future and this would be discussed further at subsequent committee meetings.

CIO 2019-20.016 Inauguration of new President

Peter Styles invited David Simpson to the podium and presented him with the President's Ribbon. David Simpson thanked Peter Styles for his service and presented him with the Past President's medal. The members gave a round of applause. David said that he was honoured to become President and told members that he had been a member of the Herbarium Staff from 1985 for 30 years. He thanked members for their nomination of him

Left: David Simpson, right: Peter Styles



and said that he was looking forward to working with the Trustees. He gave a short power point presentation outlining some of the goals for the next year together with details of the proposed event to Southern Ireland. Members were told that any questions they might have could be directed to Sara Arnold or straight to David himself.

CIO 2019-20.017 Date of next Annual General Meeting

Saturday 5th September 2020, venue to be confirmed.



Peter Styles welcomes Guild members and friends to the 2019 AGM

School of Horticulture Presentation of Kew Diploma and Prizes 6th September 2019 Course 54

Tim Hughes welcomed those present to the presentation of Kew Diplomas, Kew Specialist Certificates, Kew Apprenticeships and a whole assortment of Prizes for 2019.

He invited the Director **Richard Deverell**, to give his welcoming address.

Richard Barley, Director of Horticulture, Learning and Operations was then invited by Tim Hughes to give his introduction.

Tim Hughes, Head of the School of Horticulture, began the presentation ceremony by saying:

“Graduation day is very much about a celebration of the students’ and apprentices’ achievements. It is an acknowledgement of their hard-work in obtaining either the Kew Diploma, a Kew Specialist Certificate or a Kew Apprenticeship. For those graduating students and apprentices, this day marks the end of one chapter in your horticultural career but also the start of something new. We wish you well in your future careers, and hope you keep in contact with the School.

So, before I turn to the presentation of certificates and prizes. Thanks must go to all our sponsors of prizes, many of whom are in the audience today. Thank you. I would like to thank the commitment of Kew staff, visiting lecturers and examiners, that continue to give tremendous support to the School of Horticulture.

I would now like to invite our guest speaker, **Alan Lewis**, to make the presentations.

I shall first read out the awards and prizes, followed by the name of the recipient, in alphabetical order.”

Kew Diploma Awards

The George Brown Prize awarded to the top student in the Arboretum and Horticultural Services Section.

The Kew Guild Individual Study Prize for the student attaining the highest marks in their Systematic Botany Project.

The Dummer Memorial Prize for the student undertaking the best Herbarium naming project.

A Kew Diploma with Honours is awarded to: **Tristan Agates**

The Kingdon-Ward Prize awarded to the student attaining the highest marks in their final-year dissertation.

The Freda Howson Award for excellence in Ecology and Conservation.

The Kew Guild Cup for obtaining the highest marks in the 1st year vegetable plot project.

A Kew Diploma with Honours is awarded to: **Richard Choksey**

The George Conrad Johnson Memorial Prize for the best overall performance on the Kew Diploma course.

The Matilda Smith Memorial Prize given to the best practical student overall.

The Fred Larkbey Cup awarded to the student achieving the highest marks in their practical work placements.

The F Nigel Hepper Cup in recognition of the highest achievement in plant identification assessments.

The Worshipful Company of Gardeners' Prize to the student attaining the top overall academic and practical marks.

The Kew Gardener Prize to the top student in Amenity Horticulture.

The Donald Dring and Gilbert Memorial Prize for the student attaining the highest marks in Entomology and the Crop Protection project.

The Squire's Garden Centre Prize for the best overall performance in landscape studies.

Along with the Kew Diploma with Honours is awarded to: **Sal Demain**

The CP Raffill Prize awarded to the student(s) giving the best KMIS student lecture (joint-winners)

Along with the Kew Diploma with Honours is awarded to: **Alison Legg**

The Alitex Glasshouse award, awarded to the student who has demonstrated the best practical performance during their work placements under glass.

The Worshipful Company of Gardeners' Prize for 3rd year student achieving top overall academic and practical marks with English as their additional language.

The Ashley Hughes Memorial Prize for the student showing most support and congeniality to their course colleagues.

The CP Raffill Prize awarded to the student(s) giving the best KMIS student lecture (joint-winners)

Along with the Kew Diploma with Honours is awarded to: **Andrea Topalovic Arthan**

A Kew Diploma with Credit is awarded to: **Kathryn Bray**

A Kew Diploma with Credit is awarded to: **Hugh Fletcher**

A Kew Diploma with Credit is awarded to: **Alex Little**

A Kew Diploma with Credit is awarded to: **Ana Oliveira**

A Kew Diploma with Credit is awarded to: **Luke Senior**

Kew Specialist Certificates and Apprenticeship Prizes and Awards

Kew Specialist Certificates in Display & Nursery Glass are awarded to:

Mya Anlezark

Naomi Paine

Sam Ward

A Kew Specialist Certificate in Kitchen Garden Production is awarded to:

Joe Richomme

Kew Specialist Certificates in Ornamental Horticulture are awarded to:

Emily Blackmore

Ellen O'Connell

A Kew Specialist Certificate in Propagation is awarded to:

Ellie Pay

Lawrence Lewis – sadly unavailable to attend

A Kew Specialist Certificate in Arboriculture is awarded to: **Oli Nichols**

A Kew Specialist Certificate in Orchid Cultivation is awarded to: **Alberto Trinco**

A Kew Apprenticeship is awarded to: **Ella Buckley**

The Historic Glasshouse Apprentice with the best Work Journals and Plant Profiles Prize

And the Apprentice who has made the most progress throughout the course

Along with a Kew Apprenticeship is awarded to: **Joe Evans**

The HTA best practical Apprentice prize and the Apprentice with the best Weed Project Prize

Along with a Kew Apprenticeship is awarded to: **Lily O'Neill**

The Apprentice with the highest test results in plant identification along with a

Kew Apprenticeship is awarded to: **Elie Wilms**

A Kew Apprenticeships in Arboriculture is awarded to: **Dexter Shallcross-Gage**

Certificates of Attendance are awarded to:

Cheyenne Westwood

Emma Love (who is unable to attend)

Other awards and prizes

The Tom Reynolds' Prize for Plant Biochemistry and Physiology awarded to the person obtaining the highest marks in this subject, which is a first year Diploma topic.

The Chartered Institute of Horticulture Prize for top 1st year student

Goes to: **Mira-Marie Nubold**

Gardens Illustrated Prize awarded by the magazine to a Kew Diploma student, attaining the highest marks in their first-year practical subjects. This prize goes to: **Charles Shi**

The Metcalf Cup for the highest academic examination marks in the 2nd year of the Kew Diploma

The Sir Joseph Hooker Prize is given in recognition of the work carried out by the Chairman of the Kew Mutual Improvement Society. Goes to: **Faye Adams**

Tim Hughes then invited **Alan Lewis** to say a few words.

Marcus Agius, Chairman of the Board of Trustees, gave a Vote of Thanks.

Alex Little of Course 54 gave the Student Vote of Thanks.

Tim Hughes then said in closing: “I would once again like to thank Alan Lewis and everyone involved in making this special day come together. While there are too many people to mention individually, none of it would be possible without the patience and support of Jennifer, Kate, Dawn and Martin – the staff of the School of Horticulture – so a big thank you to you and a thank you to Marcello for today’s wonderful floral displays.

If I can ask the audience to please remain seated while the platform party, Diploma graduates, Student and Apprentice graduates and prize winners follow Kate to the Grass Garden for photographs. Later at 5 o’clock guests are invited to enjoy a tour of the Gardens on the Kew Explorer. The tour lasts approximately 35 minutes, departs from the Grass Garden. I would like to add my final thank you to all of you for attending today and I hope you will join us at the School of Horticulture where afternoon tea will be served.”

©*Tim Hughes*

Kew Students Prizegiving - Group Photo © *RBG Kew*





Jon Bedford



Ciaran Bradshaw



Abigail Cain



Malgorzata Czarnecka



Jessica Francis



Laura Haslam



Emily Hazell



Elizabeth Mansfield



Ruari Mostyn



Fruzsina Nagy



Franziska Stampfli



Robert Taite



Andrew Wilson

Kew Diploma C57

Student Report

by Silke Strickrodt (Course 56)

For the Kew Horticultural Diploma students, 2019 was another busy year. It began with C55 going into their second lecture block, with visits to Cliveden, Hidcote and Hurlingham. C55 also continued to run the Kew Mutual Improvement Society's lecture series, with fundraiser lectures by Monty Don and Dan Pearson. Meanwhile, C54 and C56 were working in their practical placements in the Gardens, Arboretum and Glasshouses. C56 was busily compiling their work diaries and, in March, began sowing their vegetable plots, which this year were 'no-dig'. C54 were beaver away at their final dissertations. This was followed by their field trip to south-eastern Spain to study the botany and vegetable production in the Almeria province.

In February, Richard Choksey (C54), Luigi Leoni (C56), Charles Shi (C56) and Yannick Woudstra (PhD student) teamed up to compete in the Botanical University Challenge at Reading University. They did not win, having slipped up on the mosses, but neither did they come last – it's all about participating and putting the RBGK on the map.

In April, the traditional Kew-Wisley Race was run (34km / 21 miles, this year from Kew to Wisley), by teams comprising seven athletes each. The Kew students were beaten by the Wisley students, after a valiant effort: Wisley first took the lead, Kew soon overtook – only to be beaten on the last leg by a Wisley runner with unfairly long legs! There was some comfort, however, as the Kew staff team beat the Wisley staff. In April, it was C56's turn for their first lecture block. The highlight was a two-week visit to the Millennium Seedbank at Wakehurst to study seeds and work in the gardens. It included a seed-collecting exercise and an afternoon of learning how to make fire with flint stones, ferris rods and feather sticks – an important skill for future plant hunting expeditions! We turned into scouts and brownies – it was fantastic and we did not want to return. Following their lecture block, C56 and Tim Hughes, the School of Horticulture's Director, visited the Flower Island Mainau in Lake Constance, enjoying the generous hospitality of Björn Graf Bernadotte. We learned about the management of this garden, which is funded solely by entrance fees, with plenty of history lessons thrown in for free.

During summer, all students were employed in practical work placements. C56 tended their veg plots (each growing 21 crops) and sold the produce to raise funds for their field trip to Spain (in spring 2021). C55 went on their Ecology fieldtrip to Wales – always a



highlight – and on their travel scholarships to Armenia, Cuba, Nepal and the USA. C54 prepared for their vivas and life after the Diploma. They graduated on 6th September, preceded by a day of outstanding pranks, including a flag on the Palm House (strictly not to be repeated!). They are much missed – they were a great bunch.

C57 started in September, with 13 students. They were welcomed with a barbecue prepared by C56 (mainly by Michael Antonetti). The traditional Clog and Apron Race

was won by Robert Taite. It was C55's turn again for lecture block. The new season of Kew Mutual Improvement Society's lectures also began in September, now organised by C56, i.e. Charles Shi (President), and Michael Leach (Deputy) and Luigi Leoni (Treasurer), with 24 lectures, including four fundraisers (by Carlos Magdalena, Alan Power, Frances Tophill and Fergus Garrett).

Kew Guild Events in 2019

Colesbourne Park – the “Snowdrop Tour”

16th February

by Alan Stuttard

The first Kew Guild event of the year is always a slightly worrying time for the President, and I'm sure that this year was no different for Peter Styles. In recent years it has become a bit of a norm that this visit is timed to enjoy gardens well stocked with that harbinger of spring, the humble Snowdrop. However, seasonal weather can play havoc with the best laid plans by making the main flowering time too early or too late, or even worse, just appalling on the day of the visit.

Well, again the weather gods smiled on a Kew Guild visit and 26 members met in The Golden Heart Inn near to Cheltenham, on a mild early spring day with some light cloud. All enjoyed a most convivial lunch and it was great to see such a good turn out with some members attending for the first time for a number of years. This reminded us of one of the major benefits of being a Guild member, meeting old friends with shared interests, in pleasant venues. After enjoying lunch and much chatter, we moved off to our destination for the day, Colesbourne Park. Described by Country Life as “Britain's greatest Snowdrop Garden”, we were expecting a good display.



Sir Henry Elwes (L) discussing things *Galanthus* with Leo Pemberton (M) and Alan Stuttard (R)

Colesbourne Park's story is an interesting one and its Snowdrop collection was started by Henry John Elwes (1846 – 1922), a country squire, traveller and naturalist. In 1894, on one of his first expeditions, he collected many species of bulbous plants from Turkey, including those that became named as *Galanthus elwesii*. During his life and using much of his collected material, he developed at Colesbourne Park what was known at the time as “the finest collection of bulbous plants in the world”. His interests continued to grow and extended to include a serious passion for arboriculture and he planted at Colesbourne an impressive Arboretum within the Churn Valley. The collection now holds 13 British Champion trees, 35 Gloucestershire Champions and 26 Remarkable specimens. Henry was not impressed at the time with the standard of books written about British trees so he co-wrote with the distinguished botanist, Augustine Henry, *Trees of Great Britain and Ireland*. The seven volumes were published between 1906 and 1913 and are still considered by many to be “unsurpassed”.

After his death the collections lay more or less undisturbed for fifty years until his grandson Henry Elwes and his wife Carolyn began to identify the Snowdrops, and develop the

collection to its present standard through regular division of the bulb clusters. Many new species and cultivars were added and a breeding programme developed new varieties that are unique to this collection. The garden now boasts some 350 species and cultivars and is laid out in large areas of mass plantings interspersed by other spring flowering items. The flagship variety is *S. Arnott*, named after the Scottish Victorian gardener, and these were in full flower at the time of our visit. The garden being focused on Snowdrops is only open to the public for three weeks in February and again for a short period in autumn for visitors to enjoy the Arboretum.

On our visit many interesting species and varieties were enjoyed, with the following being particularly noteworthy, the green leafed *Galanthus woronowii*, the large *Galanthus plicatus* “Gerard Parker”, the golden fruited *Galanthus* “Primrose Warburg”, the unfairly named *Galanthus* “Nothing Special” and the aptly named *Galanthus* “The Whopper”. Colesbourne Park has recognised the passion of the Galanthophile market and tapped into it to create an income stream to help support its favoured charities and we found an impressive 100 cultivars on sale. Whilst many of these were being sold as single flowering potted bulbs at quite reasonable prices, the rarer and more obscure bulbs were commanding increasingly dizzying prices, with the yellow leafed and flowered variety *Galanthus elwesii* “Carolyn Elwes” being sold at £290.00 per bulb.

The Kew Guild visits are always a shared mixture of horticulture, friendship and gastronomic enjoyment and therefore what better way to end a great day than to enjoy tea and the delightful array of homemade cakes made by the local Women's Institute in the Long Room (not the one at Lords Cricket Ground). I think at this point our President Peter Styles realised that the weather gods had indeed smiled on him and that he could now relax before seeing his guests leave after an enjoyable first garden visit of the season.

Rockcliffe and Highgrove Gardens, Gloucestershire

11th - 12th April

by Peter Styles

This was a two day event suggested by Martin Staniforth. The planning of the Rockcliffe and Highgrove visit had been much anticipated and was long in its making. Royal Household protocol and other events at Highgrove meant that we only received approval



Rockcliffe

shortly before the event, but we were not disappointed. Thursday morning saw 20 members and guests gathered in the car park at Rockcliffe House to meet the owners Emma Keswick and her husband Simon. Kew Graduate Thomas Unterdorfer was the head gardener here until last year and Amy Newsome, student in Kew Diploma course 56, also trained at Rockcliffe. The eight acre garden is a personal

triumph for Emma, who created the garden and whose design philosophy can be described as organic. Emma is also a garden designer in her own right, trained in horticulture at Merrist Wood and in garden design at the English Gardening School, one her of her earlier commissions involved the first Maggie's Centre in Edinburgh in 1996. The centres are named after Maggie Keswick, Simon's cousin, also a garden designer who died of cancer but left behind a legacy of cancer centres dedicated to a new approach to patient care. Maggie was supported by her husband the late architect Charles Jencks of Garden of Cosmic Speculation fame – such are the common threads that bind us all together in life.

Throughout the garden there are references to Simon's old school Eton – in the gate to the formal terrace and another reference in the pennant-shaped Dovecote weathervane. The Dovecote is a magnificent Cotswold stone structure, sitting high up in the garden and entered through a gate from the Kitchen Garden. The path is lined each side with topiarised doves creating a wonderful quirky approach. To the rear of the house Emma has created a 'ha-ha', forming the boundary to the garden and allowing an uninterrupted view to the surrounding Gloucestershire countryside. A double row of Beech obelisk draws the eye across the lawn to the 'borrowed landscape'. The view is punctuated with a striking bronze statue by Nigel Hall, aptly named Southern Shade. The garden is famous for its planting and the use of colour, yet despite the early Spring visit we were able to appreciate the form of the individual garden spaces or rooms. This has been achieved by the skilful use of clipped Yew and Box hedges and which provide all year-round structure to the garden. The formal pool garden was particularly impressive with an early showing of colour from a magnificent stand of the tiered *Cornus controversa* 'Variegata'. At the end of our tour we were treated by Emma to coffee and biscuits in the Orangery. This is truly an iconic garden and we thanked Emma for her hospitality with a copy of the Kew Guild book.

On Friday morning, armed with the requested various forms of photographic identification we gathered in a car convoy at the entrance to Highgrove. In the event the security guards were happy for your President to vouch for the good character of the whole group! Debs met us armed with a large piece of Flowering Cherry, which Leo Pemberton was able to identify. Our first plant ident test for the morning! Debs Goodenough head gardener, although with a very busy schedule for the week, was able to generously give her time to host the morning. We were extremely lucky to have such an exclusive tour of the gardens. Debs was an international student at Kew in 1985 before moving to Ventnor Botanic Gardens. Debs has been at Highgrove since 2008 and heads up a team of 11 full time gardeners. Security protocol is strict at Highgrove and sadly we were not allowed to take photos or to use recording equipment. This was understandable but a shame as there were many photo opportunities. Highgrove, an 18th Century house and gardens, is the family residence of The Prince of Wales and The Duchess of Cornwall. The Prince acquired the estate in 1980 and set about transforming it into his own personal space with energy and artistic flair. The gardens are filled with many treasures – plant and sculptures gifts to The Prince from around the world, each given its own space to form a unique feature within the gardens. There is for example an elephant themed area. The Prince has a real 'hands on' approach to his garden, which is a reflection of his own eclectic and often whimsical taste. His commitment to organic and sustainable gardening is much in evidence.

There is so much to see in a garden of this size and complexity. One favourite was the Stumpery which also contains the National Collection of Hostas and a magnificent Gunnera stone tower water feature. This would be one feature to come back to see in Summer when the Gunnera is in full leaf. The Sundial Garden has a feature hedge of clipped Yew with windows framing busts of HRH The Prince of Wales. We were told that the delphiniums, extensively planted in the garden, are one of the Prince's favourites flowers. The dramatic scale of the Thyme Walk drew us at once. An informal paved walk

with 20 varieties of thyme, marjoram and primroses form a link to the main house. Planted each side there are lines of pleached Limes framing the view to the house and providing a dramatic backdrop to the Golden Yew topiary. This ancient topiary has been clipped into magnificent and fantastical forms. Sir Roy Strong had an involvement in the redesign of this space. The Prince is keen to allow the thyme, marjoram and primrose to seed themselves into the paving thus creating a living carpet.

We were delighted to be shown a new garden in construction. A formal garden with clipped Box and Yew and with each bed a different colour scheme grading though the colours – almost like a living colour wheel. The Prince with his love of watercolour painting has a keen eye for the use of colour in his planting schemes, very much in the styles of Gertrude Jekyll. As we toured the garden, we happened upon our old Kewite friend Alan Titchmarsh who was delivering a presentation that day. There were hugs all round.

Towards the end of the tour we were handed over to gardener Ashleigh Davies, a graduate of the Kew Diploma 2015. Ashleigh invited us to see the Kitchen Garden, with its extensive production areas and the collection of rare breed chickens – all ready to provide

the Prince with those famous boiled eggs we often hear about. The area is enclosed with a Celtic knot hedge – an idea that the Prince picked up on one his many travels. The hedge is woven with Ash, Sycamore and Oak into an attractive and biodiverse living feature. It was heartening to hear of the deep trust that the Prince has with his head gardener. Even when travelling he is keen to have a regular update from Debs on what's happening in the garden. All too soon it was time for us to thank Debs and leave her to her busy day ahead – but not before we managed to capture a photograph of Leo Pemberton and Debs together; Highgrove is a garden to return to in the summer when in full flower.



Royal Garden Party Visit, Buckingham Palace, 15th May

by Peter Styles



L to R: Jean Griffin, and Linda Baharier

Your President Peter Styles, together with Linda Baharier our Voluntary Treasurer, and Past Presidents Allan Hart and Jean Griffin, donned our posh hats and enjoyed a warm sunny afternoon in the gardens of Buckingham Palace at the invitation of HRH The Queen. This was the first of seasons garden parties and the invitation was arranged by our Patron HRH Princess Alexandra.

The event was hosted by HRH The Prince of Wales, The Duchess of Cornwall and The Princess Royal and although we did not have the opportunity to speak to the Royal Family, we engaged with our fellow attendees and spread the word of the Kew Guild. As a bonus we were entertained by the Royal Goose on the

Royal Tea Tent lawn and a march past by the Yeoman of the Guard. It was interesting to note that the 42-acre Palace gardens were redesigned in the 1830s by William Townsend Aiton of Kew Gardens. Henry Wise was responsible for the original formal design which Aiton worked on to produce the Romanic Gardenesque style that we see today, with some 20th Century modifications. Capability Brown also produced a landscape design in 1762 which was not implemented, apart from some tree shelterbelts.

Aiton was born at Kew in 1766 and succeeded his father as Director in 1793. George IV commissioned him to lay out the gardens at the Palace together with the gardens at Royal Brighton Pavilion. While at Kew he published an enlarged edition of *Hortus Kewensis*. Some of the key features of his Palace redesign include the lake, gravel paths and extensive new planting of unusual tree species, heavily influenced of course by the arboretum at Kew. The gardens are now Grade II listed on the Register of Historic Gardens and Parks. Aiton was also one of the founders of the Royal Horticultural Society. He is buried in the family tomb in St Anne's Church, Kew Green.

Reflections of the Kew Guild Dinner 2019

22nd May

by Harold (Graham) Heywood

On a very pleasant sunny evening, 51 members, family and friends gathered at the Cambridge Cottage on Wednesday 22nd May in sight of a scene reminiscent of days gone by. I mean of course the cricket match playing out on Kew Green that evoked memories of my time at Kew when many an hour was pleasantly passed watching the men in whites following my two or three hours of botanising in the gardens. For a couple of years, I thoroughly enjoyed being a member of the Kew Student Cricket team. Just one of the many happy memories that still linger in the depths of my ever increasingly failing mind.

Inside Cambridge Cottage the atmosphere was one of anticipation and excitement as we all conversed with friends we hadn't seen for many years. Enthusiastically welcomed by Sparkle Ward and Jean Griffin we collected our badges and Journals and were guided to the inner regions of the 'Cottage' towards the bar. It was pure delight as members, family and friends swelled the



L to R: Helen Tranter, Peter Styles, Liz Styles, Mike Fitt, Jean Griffin

numbers over the next hour or so and we were all able to have a most relaxing catch up. The ladies were all, as perhaps expected, beautifully attired in their finest clothes, but it was a close call as to who shone the brightest amongst us once Leo Pemberton arrived. I allude of course to Leo's tulip adorned tie. How very appropriate and how very flamboyant did he look? Well he was in his 91st year after all and at that age one can get away with anything, almost!

At the appointed time, our past President Jean Griffin who on this occasion was our MC called us to our tables, took control of proceedings and called us all to order and we

‘clapped in’ our President Mr Peter Styles. The President said grace. Again, during dinner, which was, many later judged, the very best Guild dinner they had experienced, we were catching up with our friends and making new introductions. As the last vestiges of the tableware were cleared away Jean announced a 15 minute comfort break and precisely 15 minutes later she again called everyone to order at which we stood to toast Her Majesty The Queen.

Jean, on everyone’s behalf thanked the catering staff for a splendid meal and proposed a toast to the President Peter Styles and shared with us a little history relating to the President. During his studentship, Peter won a prize for his plant collection, no doubt in part due to his having included a Bee Orchid collected from the Avon Gorge - really? During Peter’s stretch in the Palm House he was known to regularly hang his jeans to dry from the balcony walkway. He was also given to wearing a sprig of Frangipani behind his ear until he discovered whilst in India that it was often interpreted by many as a sexual preference. We have come a long way, haven’t we? At Kew Peter was recognised as a future landscape designer when, as part of his Diploma, he designed a ladies lavatory. He has a quick wit and is known throughout both Kew and the landscape profession for his expertise, dedication and professionalism. Peter reminded us there is a danger that the title Landscape Architect is often used erroneously, for to be a Landscape Architect one needs to be a chartered Landscape Architect. A full biography of Peter’s career can be found in the 2018 edition of the Kew Guild. Following Peter’s address, he proposed a toast to the Kew Guild and our Guests Helen Tranter and Mike Fitt. A toast was proposed to absent friends by student representative Daniel le Cornu. At the Dinner it is usual to award the Kew Guild Medal to that year’s recipient. This year the award goes to Laurie Olin, American Landscape Architect. However, the President informed us Laurie was unable to attend the Dinner this year and therefore arrangements are in hand to present Laurie with the Kew Guild Medal in the Autumn when he is expected to be in the UK.

The President then introduced us to Helen Tranter, Vice President of the Landscape Institute. Helen said she was delighted to be amongst Kew people and emphasised that she was not a Landscape Architect but a Landscape Manager. Helen is a Green Flag Judge and manages a plantation of 200 Cricket Bat Willows for her family. She has previously worked in local government and is linked with many of the landscape managers who look after our green spaces. Kew graduates are well represented within this group. The Institute engages regularly in its work with no less than 20 influential organisations, and representation was based upon the Institute’s Corporate Strategy for 2018-2023 entitled People Place and Nature reflecting the link between the three. Helen reminded us that over 20% of our landscapes are designated as Areas of Outstanding Natural Beauty and so the LI regards these as important partner organisations. Staff from the AONB teams are being encouraged to join the LI. She said that increasingly, Governments and agencies now understood the need for landscape-led approaches to urban living spaces. Helen shared with us the Landscape Institute’s Continuing Professional Development Programme (CPD) for 2019-2020 that included subjects from plants and bio-security to climate change to people and places, digital integration and transformation to health, wellbeing and place.

One of Helen’s tasks is to widen the breadth of membership of the Landscape Institute by introducing new entry standards that cater for a wider range of disciplines. The profession is becoming more diverse and specialised. A dual system is being introduced with one track for the traditional landscape architects and another for landscape professionals. In the past, there were three categories: Landscape Architect, Landscape Manager and Landscape Scientist. By keeping landscape architecture as a separate track, it helps to protect the identity of this group of members whilst facilitating growth. The current LI President, Adam White, is particularly keen to involve children in a “Back to Nature”

initiative and has been supporting them with the involvement of the Duchess of Cambridge in designing a garden at the Chelsea Flower Show. This is particularly appropriate as the LI was founded at the Chelsea Flower Show in 1929, so is celebrating its 90th anniversary.

The President thanked Helen for her presentation and members gave a round of applause. Following Helen Tranter's presentation came the presentations; firstly, Honorary Fellowship of the Kew Guild was awarded to Michael Fitt OBE and The George Brown Award went to Marcella Corcoran. In responding to his award, and taking receipt of a copy of the Kew Guild book from the President, Mike thanked all present and took us back in time as he shared highlights of his career. Although he didn't study at Kew, he has always been inspired by Kew. Before his retirement, Mike was Deputy Chief Executive of the Royal Parks, being responsible for the day to day management and maintenance of London's eight Royal Parks. He continues to have an involvement with The Royal Parks as Honorary Archivist and Chairman of the Royal Parks Guild. Mike is involved with numerous initiatives and particularly he is passionate about involving people from diverse backgrounds in Horticulture, particularly young people and disabled people. Mike is a Freeman of the City of London and a Liveryman of The Worshipful Company of Gardeners and the writer was not the only one to feel humbled to hear of the many achievements and passion for horticulture and people of this lovely man. In closing, Mike said he always had the same words of encouragement for anyone finding things difficult whilst making their way, no matter at what level, and that was 'Don't Give Up'. A more detailed Biography of Michael Fitt OBE can be found in the Guild Journal of 2018. At the conclusion of Mike's address, overseas representatives and past Presidents' stood to a round of applause and a very sincere and heartfelt thank you went to Tony Overland for his meticulous organisation of the Dinner and to Jean for executing the task of MC with wit and precision. To round off a splendid event, Jean and the President called the numbers for the raffle which on this occasion raised £230 for the Kew Students' travel. *Save the date: In 2021, the Kew Guild Dinner will be held on 20th May. - Ed.*

Gardens in South Hertfordshire

8th - 9th June

by Peter Styles

This was a weekend event that was originally organised by Bob Ivison in 2018 but was postponed to June 2019. 26 members and guests gathered at Capel Manor College on a damp Saturday morning. Our spirits were immediately enlightened by our host for the morning Dr Stephen Dowbiggin, past Principal of the College. His enthusiasm was palpable – clearly a man who although retired still retained a great love and interest in the students and the future of the College. Capel Manor is an extraordinary Institution. With 60 gardens and landscapes spread over 30 acres and it's easy to forget that these wonderful grounds support no fewer than five individual Schools and Colleges including Arboriculture, Agriculture and Environmental, Conservation, Royal College of Animal Management and Saddlery, plus of course its Higher Education Course – in short, the very epicentre of learning excellence. Since its establishment in 1968 hundreds of students have passed through its doors, many going on to establishing successful careers in horticulture, garden design, floristry, equine and arboriculture. Alumni include garden designers Anne-Marie Powell and Kim Wilde. The Which magazine has its garden trials here such is the College's high esteem in the horticulture world.

The history of Capel Manor dates back to the 13th Century. There is very little evidence of the original estate layout today. The historic gothic elements seen in the gardens today have been skilfully created to provide a theatrical backdrop to the gardens, so much so that they are in great demand for regular wedding events. The central elements to the estate

are the Georgian house and Victorian stables. There are Royal connections aplenty – HRH Prince Charles is a frequent visitor and both HRH The Queen and Princess Diana have opened display gardens – Stephen entertained us with a few ‘Royal’ anecdotes.

After a splendid lunch at the College Refectory we assembled at Myddelton House garden in the afternoon to meet our host Bryan Hewitt (senior gardener). Bryan is a man of many parts not least an expert on the Gothic horror actor Vincent Price and is also an author to boot. Bryan made us feel very much at home and is a natural raconteur providing us with a veritable smörgåsbord of good stories as we toured the gardens. Myddelton House and Gardens, built in 1818, are managed by the Lee Valley Regional Park Authority. Myddelton was the home of Edward Augustus Bowles – ‘The Crocus King’ and Bowles dedicated his life to maintaining and developing the Gardens. Myddelton was also at one time the plant base for the London School of Pharmacy and a vivisection centre. Apart from Crocus one of Bowles’ passions was for plants with contorted stems and foliage. He created a plant ‘Lunatic Asylum’ – one of the original plants featured here is *Corylus avellana* ‘Contorta’. Bowles was also an accomplished artist and author. One of the highlights of the 8-acre Garden is the Victorian glasshouse with its four climatic zones and there was a further surprise discovery for us – the original early Victorian Enfield Market Cross which Bowles saved and erected as a central feature in the Rose Gardens. To these features we can add an extensive heritage kitchen garden and the cut flower beds. Bowles’ plant hunting trips to the Pyrenees inspired him to create a fine Alpine Meadow which features his signature Crocus and other choice bulbs. The recently renovated Rock Garden with its Japanese style pagoda was of considerable pleasure to Bowles who helped with its construction. On his death his ashes were scattered here.

A stand of Japanese Knotweed was an unusual find for us. Bowles was a great admirer of this invasive plant and specimens are maintained to educate visitors on identification and how this weed can be kept in check. I remember planting Japanese Knotweed in my own Richmond garden back in the late 1960s because of its architectural qualities and easy cultivation made it a firm favourite for a budding landscape designer. I may have been responsible for spreading Japanese Knotweed throughout the Borough! Throughout the gardens there are plants discovered by Bowles and which bear his name. Hebe ‘E. A. Bowles’, *Helleborus* ‘Bowles Yellow’, *Erysimum* ‘Bowles Mauve’ and *Viola* ‘Bowles Black’ were noted. There are more than 40 plants named after him and a Bowles Corner at RHS Wisley has been dedicated to his plants. New additions to the Gardens, funded by the Heritage Lottery and opened in 2011, include the Bowles museum and a fine Bowles tearoom which we were able to enjoy after our extremely entertaining and informative garden tour by our host Bryan Hewitt.

We all enjoyed a superb evening meal at the Pied Bull in Enfield on Saturday night and on Sunday morning, with the sun shining brightly, we gathered at Hatfield House where we were met by our host

Andrew Turvey Head of Gardens and Estates. Andrew maintains the gardens and estate with a staff of 10 – no small feat given that the gardens cover 42 acres. Hatfield House built in 1611 by Robert Cecil, son of Lord Burghley, is a splendid Jacobean house. It is the home of the present 7th Marquess and Marchioness of Salisbury and has been in family for 400



Hatfield House

Hatfield House



years. It embraces a diverse portfolio of property, which we were informed by Andrew includes TV and film production facilities as it is so close to Pinewood and Elstree studios. Recent productions include *The Crown*, *Paddington 2* and *Transformers*. We commenced our tour posing in front of Hatfield House. Behind us, forming an impressive backdrop, was the water sculpture. Suitably titled 'Renaissance' it was commissioned by Lord Salisbury and designed by Angela Connor, the world-famous sculptor. Hatfield defines the very essence of English history. It was in the medieval parkland in 1558 that the young Princess Elizabeth Ist heard of her accession to the throne. An Oak planted by HRH The Queen in 1985 marks the spot and replaces the original veteran Oak. There are many other fine veteran trees throughout the estate which we were able to inspect including the famous Lime Avenue. Andrew explained that he is collaborating with Barcham Trees on the propagation and planting of new trees to the Avenue.

There was so much to see in one day, but highlights included the Sundial Garden, commissioned to celebrate Hatfield's 400th anniversary. We entered the Garden through box tunnels which opened out onto a paved area surrounded by raised rose beds and blue and white delphinium and iris planting. The unique Longitude Timepiece appropriately locates Hatfield as the centre of the world. The sheer scale of the 16-acre landscaped Broadwater lake is breath-taking. We were informed that the island has been recently planted with twenty species of Oak. The East Garden, another highlight, was laid out by the 5th Marquess and contains parterres, topiary drums and octopi shapes, and some very unusual planting. Hatfield is a place to return to time and again and we all thanked Andrew for his wonderful tour and presented him with a copy of the Kew Guild book.

Down House, Ashdown Forest, Millennium Seed Bank and Wakehurst Place, 6th and 7th July

Down House and Ashdown Forest, 6th July - Harold (Graham) Heywood.

Twenty-two adult Guild members and friends gathered at the gates of Down House situated in the rural Kent village of Downe for an early start to our tour of this wonderful English Heritage managed property. On this occasion we were also joined by a delightful eight year old young lady called Amelia, the granddaughter of Brian and Sylvia Phillips (who had organised the weekend's events). We learned that Amelia had recently travelled (by herself) from Switzerland where she lives, to be with Gran and Granddad for this weekend. Now that is dedication. It is pity she cannot be signed up as a junior member of the Guild!



Antony O'Rourke explains the History of the Walled Garden at Down House

Once inside we were introduced to our guide, Antony O'Rourke, a graduate of Kew. Antony has worked in numerous botanical gardens; more recently he ran his own very successful company in west London designing and maintaining high end gardens for a diverse client base. His particular passion is for carnivorous plants, orchids, tropical plants and hardy herbaceous. Antony started a little over two years ago at Down and set about a programme of restoration of

Emma Darwin's mingled border, the Mound, Experiment Bed and re-evaluating the Glasshouse collection to truly reflect life at Down and bring the Darwin narrative to life. It was here at Down that Darwin developed his theory of evolution by natural selection and where he wrote in 1859, his seminal work, *On the Origin of Species by Means of Natural Selection*. In subsequent decades, Darwin went on to develop his theory and published several important works based on his observations at Down.

Following Antony's welcome, he pointed out that the view beyond the boundary wall is not as it was when the Darwins moved into Down in 1842. Charles Darwin decided he wanted to be able to view the landscape beyond the wall and so reduced its height to give an uninterrupted view of the countryside. At the same time the road beyond the wall was lowered to maintain the family's privacy from prying eyes. The spoil from the road went into the garden and was used to create an embankment around part of the house. The mound was removed during the many extensions and alterations to the house that took place over many years. Charles Darwin married his wife and first cousin in January 1839. Charles and Emma had 10 children of whom 7 survived to adulthood. Antony said he was dedicated to presenting the garden as the Darwins would have known it, from the ornamental beds through to the produce grown in the kitchen garden and of course bringing to life the narrative of the experimental 'Mr. Darwin at Down.' Darwin and his wife moved into Down House with their two young children in the autumn of 1842. It was the family's home for 40 years until Darwin's death in 1882. Antony directed our attention to the centre of the house and pointed out that the original Georgian façade had been remodelled by Darwin to include a large bay window, the 'insert' extending the full height of the house.

The common thread running throughout the gardens as we see them today is the painstaking and meticulous re-creation of plantings that Emma Darwin and her family would have enjoyed. Such is the dedication of Antony, Head Gardener and his small number of assistants. Also on view in this area were re-created trial beds where Darwin conducted some of his research. We moved on to the herbaceous borders, where some of the plants had large labels inserted nearby. These Antony explained, identified sections of the herbaceous garden from which specimen pieces were taken for benefit of staff (and visitors) to help increase their knowledge of plant identification. Antony informed us that it was likely that Emma Darwin would have had all individual plant types labelled and this tradition has been maintained in the garden today. Halfway down the central pathway were planted specimens of climbing Rose 'Blush Noisette' being trained up a pergola.

This variety replaced Dorothy Perkins, the latter being a 20th Century Rose. Blush Noisette on the other hand was amongst the Roses mentioned by and cultivated by Emma Darwin. Antony informed us that this variety of rose was confirmed by meticulous research into the date of this plant's introduction and cross referencing with archive material at Down.



Rear view of Down House

We entered the glasshouses, built in the early 1860s, giving Charles Darwin a more specialised growing environment that he required for his experiments. It was a much-improved situation from trying to

cultivate tropical plants in his drawing room within a plant case. Once built, the new glasshouses were soon occupied by plants recommended and supplied by Darwin's friend Sir Joseph Hooker, Director of the Royal Botanic Gardens at Kew. As in Darwin's time, the glasshouses are filled with climbing plants, orchids and insectivorous plants. Orchids were grown by Darwin to explore the previously unknown link between insects and orchid pollination. Antony pointed out that *Drosera rotundifolia* first came to Darwin's attention when he was walking in Ashdown forest (the venue for our next visit later that day). Climbing plants on display included *Jasminum polyanthum*, *Bignonia capreolata*, *Echinocystis lobata* (wild cucumber) and *Passiflora x exoniensis*. Charles Darwin was fascinated by the growth habit of climbers and made some notable observations, such as circumnutation (gyration of plant stems around supports i.e. trellis).

Moving onto the kitchen or walled garden, this is surrounded on three sides by a high wall where we saw a variety of vegetables growing in harmony with annuals *Calendula*, *Cosmos* and *Limnanthes*. The beds were accessed by a path lined with low growing box hedging that extended the full length of the kitchen garden. Our next stop was a meadow that Antony explained was currently the subject of a concerted effort to preserve the Wax Cap fungi - the Fungi Field is a site of national importance. The Wax Cap fungi are only found on unimproved grasslands. Antony informed us that at Down they keep the field regularly mown and remove the trimmings to prevent nutrient build up. The fungi field is not open to the public to preserve this delicate habitat. From here we progressed to the Sandwalk. In 1846, Darwin rented from Sir John William Lubbock a narrow strip of land of 1.5 acres adjoining the Down House grounds. Darwin had a variety of trees planted, and ordered a sand and gravel path a quarter of a mile long to be created around the perimeter. The Sandwalk became the place where Darwin would take frequent walks whilst pondering his various theories and research and thus became his 'thinking path'. The land rented by Darwin was eventually purchased by him in 1874. At this point, our tour ended but Antony recommended we continue on the Sandwalk through the wooded area and return to the kitchen garden via The Great House Meadow a 15-acre field with a rich variety of meadow plants and grasses. Antony told us to watch out for specimens of *Epipactis purpurata* (violet Helleborines). Before Antony departed, our President, Peter Styles presented him with a copy of 'A Century of Kew Plantsmen - A celebration of the Kew Guild' by Ray Desmond, and F. Nigel Hepper.

Ashdown Forest and Pooh Bear. On arriving at The Education Barn, we were introduced to and welcomed by Steve Alton, Conservation Manager of the Forest. Steve joined the Forest in December 2013 and has over 25 years' experience in the conservation sector. Originally a conservation officer for the Wildlife Trusts, he then spent 13 years running the UK Programme of Kew's Millennium Seed Bank project at Wakehurst Place.

We learned that Ashdown Forest came into existence as a Norman deer hunting forest in the period following the Norman Conquest of 1066. It is approximately 6500 acres and has 48 car park areas. In 1662 the forest was granted to one of Charles II's closest allies, George Digby, Earl of Bristol, and it was formally disafforested to allow Bristol a free hand to improve it. His attempts to do so were however frustrated "by the crossness of the neighbourhood"; subsequent Lords of the Manor suffered similar opposition from the commoners. Compromise proposals were made to divide up the forest. These unresolved tensions came to a head when, in 1689, a major landowner and 'Master of the Forest', Charles Sackville, 6th Earl of Dorset, brought a legal suit against 133 commoners in the court of the Duchy of Lancaster. The court decided to appoint commissioners to divide up Ashdown Forest's 13,991 acres (5,662 hectares). The commissioners made their award on 9 July 1693. They set aside 6,400 acres (2,600 hectares), mostly in the vicinity of farms and villages, as common land, where the commoners were granted sole right of pasturage and the right to cut birch, alder and willow (but no other trees). The commoners were however excluded forever from the rest of the forest, about 55% of its area, which was assigned for "enclosure and improvement". The award is largely responsible for shaping the map of Ashdown Forest today.

Steve informed us that today, overall responsibility for the upkeep and management lies with East Sussex County Council. The Council delegate the management of the forest to a Board of Conservators comprised of representatives of the county council, Wealden District Council and five 'commoners' - people who have a traditional right to graze livestock and collect firewood and bracken in the forest. However, the forest is still being changed. One and a half million visitors per year, mostly by car alone, creates a very challenging management task for the conservation staff. Horse riders, walkers and dogs compete for territorial rights of way. Steve informed us that fly-tipping is a great nuisance. One of the worst enemies of the Forest is the atmospheric nitrogen from cars.

Nonetheless there is a natural process of change. The area arose from a post glacial landscape that is now more open due to grazing by large animals, including approximately 6000 fallow deer. There are often complaints from the public when for instance, the staff remove large numbers of trees to ensure the heathland areas do not get overrun. There are often heated debates in the local press decrying this and demands for the practice to stop. Steve's predecessor was no less immune from criticism of the need to employ heavy machinery and use of controlled burning. He was known to staunchly defend these practices but also admitted that whilst these management practices were sound, what they



The President, Peter Styles (R) and members reminisce at Gills Lap, Ashdown Forest

(the staff) had failed to do was communicate effectively to the public why such practices were necessary. Clearly this kind of reaction can only be met with gentle persuasion and education. At present over 60% of the forest is heathland and 40% trees/shrub land. Steve informed us that if left alone for five to seven years, the forest would return to Birch scrub. The forest as it is today, he informed us is rarer than tropical rainforests!

Ten people are employed to manage the Forest. As part of the management regime, large areas are set fire to as part of controlled burning. One year later, seedlings of heather appear and Gorse

rejuvenates very easily. As for livestock, Exmoor ponies graze the forest, and there are also 300 Hebridean sheep. The forest is also home to the Rigged Galloway cattle; an ancient form of Galloway. Steve went on to explain the management balance that he and his staff colleagues aim for; to maintain an optimum regime of management and to be as little disruptive to the public as can be, given the fine balance that has to be achieved. Funding is sourced via public donations and countryside stewardship grants.

In conclusion Steve asked us to be on the lookout for the rich fauna and flora of the forest. Birds we were to look out for include wood warbler, turtle dove, red start - rare! and flycatcher. Plants to look for include Drosera, Bog Pimpernel and Vaccinium. The final act before departure was to take a group photo together with Steve and for our President Peter Styles to present him with a copy of *'A Century of Kew Plantsmen - A celebration of the Kew Guild'*.

We left the Education Centre car park in convoy to assemble at Gills Hill car park from where we continued on foot. The first part of our trek was in open heathland but with heads down we were soon pulled up short as we gingerly negotiated a very narrow path with gorse and brambles being pushed out of the way, resulting in a few cuts and scratches. This was no place for a dodderly 75-year-old I was thinking, yet there was no turning back now. After all, if an 8-year-old girl could do it then surely, I could, I told myself.

Ashdown Forest is famous as the setting for the Winnie-the-Pooh stories written by A. A. Milne, who lived on the northern edge of the forest and took his son, Christopher Robin, walking there. The artist E. H. Shepard drew on the landscapes of Ashdown Forest as inspiration for many of the illustrations he provided for the Pooh books. Eventually we emerged into a clearing known to Pooh Bear as 'The Enchanted Place'. From here we enjoyed the magnificent view across the valley below that includes Pooh Bear's 100-acre wood, that in reality is some 500 hundred acres. The forest rises to an elevation of 732 feet (223 metres) above sea level, its heights provide expansive vistas across the heavily wooded hills of the Weald to the chalk escarpments of the North Downs and South Downs on the horizon.

Continuing our journey, we were led by Amelia and her grandparents to another clearing called Roo's Sandy Pit of Pooh Bear's fame. At this stop Amelia scurried towards the bottom of the 'Pit', and Brian responded to Amelia's request for him to join her. He gingerly started his descent and soon found himself being propelled towards the bottom but in trying to slow down he tumbled head over heels before coming to a halt. "Are you alright shouted Pooh Bear?" Actually, it wasn't Pooh but a chorus of concerned members who were in wonderment that no great harm had come to Brian. At this point we decided it was time to depart and foregoing the pleasure of throwing sticks into the stream that runs under Pooh Stick Bridge we headed back to the car park and so ended another very pleasant and informative Kew Guild visit.

Millennium Seed Bank and Wakehurst Place, 7th July - Sylvia Phillips.

Thirteen members gathered at Wakehurst Place on Sunday morning for a tour of the Millennium Seed Bank (MSB). Our guide was Dr John Dickie, Head of Seed and Lab-based collections at Kew. We were treated first to a talk in the seminar room explaining the work of the Seed Bank, before touring the laboratories and cold store. All life on earth depends on plants, but the MSB is the only seed bank in the world concentrating on wild-collected seed on a global basis. Plants are essential to mankind for food, medicine, construction etc, as well as regulating climate, controlling flooding, nutrient recycling and other ecosystem services. Yet the natural environment is being destroyed at an ever increasing rate. At least 20% of plant species are threatened with extinction through habitat loss, expanding human populations and climate change. The MSB is addressing these

problems through seed banking, and has a target to bank 25% (75,000) of the world's bankable plant species by 2020.

Dried and frozen seed can live for many decades when stored in optimal conditions. Seed is collected in the field and brought to the MSB. There it is cleaned, dried at 15°C and 15% relative humidity, and finally frozen and stored in underground vaults at -20°C. However, seeds vary greatly in how long they can be kept in storage. We learned that tales of wheat being germinated from the pyramids in Egypt were a fraud! Research at the MSB investigates the importance of collection timing, temperature and moisture content on different seeds, and includes regular germination testing of the stored seed to develop propagation protocols for each species. We learned that three plants provide 50% of all human food energy: rice, wheat and maize. Wild relatives of these important crops contain useful genes that can be used in breeding programmes to improve the crop by conferring useful traits like disease resistance or higher yield. In many countries humans are also dependent on wild plants e.g. in Tanzania wild plants provide 30% of household livelihoods, and in most countries livestock primarily eat wild forage species. 75% of the world's people rely on plants for traditional medicines, such as aspirin which originated from the bark of willow and has been used as a painkiller for at least 2000 years. Drugs derived from the Madagascan rosy periwinkle have much improved the chances of recovery from childhood leukaemia. Seed supplied by the MSB has helped in the development of a biological control for Japanese Knotweed. The banking of wild collected seed is an important way to preserve some of the world's plant diversity and potential before it is lost forever.

Some seeds do not survive drying and freezing, particularly trees from tropical rainforest and some alpine species e.g. certain species of *Primula*. Methods have been developed to store these seeds (known as “recalcitrant”) in liquid nitrogen. The MSB is actually a partnership between Kew and 170 partner institutions in 85 countries. Seed is kept in trust for conservation and research purposes. It is supplied to organisations for a variety of purposes e.g. habitat restoration, conserving endangered or endemic species and improving rural livelihoods, but always with the prior consent of the partner institution in the country where the seed was collected. The talk was followed by a tour of the laboratories, following the route of incoming seeds through the cleaning, drying, testing and freezing processes. We were led down to the underground vaults, viewing the many rows of shelving carrying kilner jars of seeds. Finally, we were shown the accommodation area for international students coming to the MSB on training courses, enabling them to take MSB expertise



back to their own partner countries. We came away with a much better understanding of the worldwide scope and expertise of the work done at the MSB, and an appreciation of how that work is contributing to the protection of the natural environment for the benefit of humanity.

Great Pagoda and Agius Evolution Garden, Kew

7th September

by Peter Styles

As part of the AGM festivities at Kew we were invited to view the recently completed Agius Evolution Garden which replaces the old Order Beds. Those of us who were horticulturists and students at Kew will well remember working on the old beds. Our host for the event was Kew's Director of Horticulture, Learning and Operations Richard Barley who kindly gave up his Saturday morning to show us around the Garden. Completed in mid-2019 the Garden covers 1.3 acres and is filled with about 700 species and varieties of plants. Divided into a series of rooms the design has been skilfully conceived by Richard Wilford, Kew's own 'in house 'landscape designer'. The planting follows a natural evolutionary trail, unlike the former Order Beds with their formal plant classifications. The plant evolution story starts 350 million years ago. Ferns, Cycads and Equisetums form some of the first plant groupings in the Garden, moving through Magnolia and Palm species and finally to the main flowering plants species and families. Each section of the Garden tells a different, interesting story, which is well supported with first rate interpretive information. An opportunity in the creation of the Garden has been taken in the use of DNA plant analysis to inform the plant groups. This has revealed some interesting plant relationships. Peonies for example are not related to *Ranunculus* despite their similar flower structures. They are in fact related to Saxifrages.



The Garden was generously funded by Kew's then Chair of Trustees, Marcus Agius and his wife Kate de Rothschild Agius, sister of Lionel de Rothschild, whose hospitality we all enjoyed in our visit to Exbury Gardens in May 2017 (Journal number 122). We thanked Richard Barley for a fascinating insight into plant evolution and the way that Kew is engaging more on a plant science level with the visitors to Kew. The event then continued with a visit to the recently restored Great Pagoda, a much loved Kew icon, reopened in 2018 after many years of closure. Organised by Bob Ivison, ten members and guests were allowed free access to the Pagoda, courtesy of the Historic Royal Palaces who manage this fine 18th Century structure. 253 steps were climbed to the top. Looking out from the top storey across the Arboretum one feels that there is scope for some of Richard Wilford's magic to rework the shrub island beds! One interesting fact about the famous finial dragons that adorn the roof is that there are only 8 dragons traditionally

carved from African cedarwood - the other 72 are produced by modern 3D printing with a plastic material! Some of us concluded our very informative morning with a splendid lunch at the new Pavilion restaurant.

Kew Guild Awards Scheme 2019

by Chris Kidd

The KGAS met on Thursday 7th March 2019 at 4pm and Thursday 11th July 2019 at 4pm to consider applications for awards and the nomination for the George Brown Memorial Award. The Chair of the Awards Committee is, as ever, greatly indebted to the other members of the committee, all of whom should be individually praised for their help, advice, commitment and probity in operating this scheme within the rules of the Guild. Particular thanks must be made to Marcella Corcoran for unstinting and full commitment to the role of Secretary over so many years. Marcella is stepping down from the Secretary role but will remain a member of the committee. A new Secretary has been found in Vanessa Barber who shadowed Marcella in July 2019 and takes on the position fully in March 2020.

Members will need no reminding that the Awards scheme exists to *make* awards, not *withhold* funds, a task that would be made very simple indeed if applicants read the application form and guidance.

Present in March were Chris Kidd (Chairperson and acting Secretary), Allan Hart, Gillian Leese, Rebecca Lane (student), Silke Strickrodt (student) and Jean Griffin (Past President of the Kew Guild - observing). Apologies from: Marcella Corcoran (Secretary), Susyn Andrews, David Hardman, David Simpson, Sal Demain and Peter Styles. Present in July were Chris Kidd (Chairman), Vanessa Barber (Secretary) Marcella Corcoran (Secretary), Allan Hart, Peter Styles (President) David Simpson (President elect), Susyn Andrews, Gillian Leese, Rebecca Lane, Silke Strickrodt, Sal Demain, Richard Wilford. Apologies from: Linda Baharier, David Hardman.

Awards

A total of £13,012 from the five named Funds and General Funds was available at the meeting to be made as awards. Eight applications had been made, all were successful after individual discussion.

Andrew Luke Research and collection in Vietnam
Awarded £900 from Redman Fund

Richard Baines Research and collection in Vietnam
Awarded £900 from Redman Fund

Faye Adams Study tour in Armenia
Awarded £688 total, £500 from Ian Leese Fund, balance of £188 from General Funds

Katarzyna Babel Study tour in Korea
Awarded £1153 from Dallimore Fund

Maud Verstappen Study tour & research Armenia
Awarded £750 from Dallimore Fund

Orla Elliston Study tour & research Armenia
Awarded £750 from Dallimore Fund

Olwen Grace Study tour Kenya
Awarded £592 from General Funds

Steven Robinson Purchase moth trapping equipment
Awarded £462.50 from General Fund

Of a total fund availability of £13,012 for 2019, £6,195.50 was awarded.

Award Withdrawal

Following the awards being made, one awardee honourably notified the Chair that the purpose of their award had significantly changed. The award (£750) was consequently withdrawn. The value of the award was therefore available alongside the remainder of funds (£6816.50) from the March meeting.

Fellowship of the Kew Guild

One Honorary Fellow's Nomination was received, made by Allan Hart. After discussion the committee decided to support the nomination. It was felt that Tim O'Hare offered a strong knowledge and experience beyond the regular membership of the Kew Guild and had potential for the furtherance of the Kew Guild's aims. The Awards Committee thereby proposed to the President and informed the Trustees that Tim O'Hare to be elected as Fellow of the Kew Guild. I am pleased to report that Tim O'Hare has accepted and will attend the annual dinner in 2020 to accept the award formally.

Awards – JULY

A total of £7566.50 from the named Funds and General Funds was available at the meeting to be made as awards. Four applications had been made, all were successful after individual discussion.

Shahina Ghazanfar Herbarium visit for Flora of Iraq/Austria/7 days
Awarded £800 from Turner Fund

Felix Merklinger Study the genus Eulychnia/Chile/4 weeks
Awarded £1427 total. £1352 from General Funds and £75 from Redman Fund.

Orla Elliston Study tour & research Georgia
Awarded £750 from Dallimore Fund

Ana Oliviera Bullfinch conservation/Azores/4 weeks
Awarded £2000 total. £500 from Ian Leese Fund, £602 from Arnold Fund, £498 from Redman Fund.

Of a total fund availability of £7566.50 for July 2019, £4577 was awarded, leaving £2989.50 remaining.

George Brown Memorial Award

One nomination was received from Allan Hart for the George Brown Memorial Award,

this nomination was for myself as the current Chair of the scheme. The nomination was discussed wholly in my absence. The notice of the award from the President was a complete surprise. Despite feeling wholly unworthy, I have agreed to accept what I consider to be a very great honour, not so much in recognition of past effort, more than in advance of what I hope to return in service to the Kew Guild henceforth.

Awards Scheme Reports

Kew Diploma Travel Scholarship, Armenia (June 2019)

by Faye Adams

Armenia sits on the junction of the Euro-Siberian and Iranian-Turanian phytogeographical regions, in a seismically active area characterised by high mountains and deep gorges with several plateaus. The climate is harsh Continental/Mediterranean with stark contrasts between seasonal temperatures. This creates a region of fantastic floral diversity. More than half of the species present in the Caucasus can be found in Armenia, 217 of these are endemic. During this travel scholarship with the help of our botanical guide Anna Asatryan, the experience of Marat Shakhbekyan (Seven Springs Tour) our two drivers, and many people we met along the way, we visited nine (of twelve) different floristic regions across Armenia, saw more than 200 different species and experienced the staggering diversity of the country which exceeded my expectations. The greatest diversity can be found in semidesert zones of which there are several distinct types. On our first stop in one of Armenia's Important Plant Areas – Vohjaberd – we were greeted by *Centaurea carduiformis* DC., we also spotted the diminutive *Hohenackeria exscapa* (Steven) Grande., an endemic only found in this area and in the Red Data Book of Armenia.

A highlight of the travel scholarship was a visit to the semidesert areas of the Ararat Plain, after driving past swathes of saline semidesert characterised by *Artemisia fragrans* Willd., we climbed to circa 1,300 metres to view phryganoid vegetation and found a population of *Gypsophila aretioides* Boiss., the largest of which measured a staggering 80cm diameter. Just before leaving we spotted the deep claret of *Tomanthea daralaghezica* (Fomin) Takht., a beautiful and rare endemic of this area. With the help of local drivers and ex-military vehicles we were able to visit remote areas, home to some incredible meadows. Above the tiny village of Ltsen, a north-east facing hay meadow had been over-sown with native *Onobrychis transcaucasica* Grossh., *Vicia cracca* L. and *Salvia nemorosa* L. could also be

found, creating what looked like a designed pictorial meadow, teeming with insects. Close to Jermuk at approx. 2,000 metres in a region characterised by open Juniper woodland there are fields of managed hay meadows that follow a traditional cutting regime. Although not yet in full flower these meadows were abundant in *Centaurea gigantea* Sch.Bip ex Boiss. And *Lathyrus miniatus* M. Bieb. ex Steven. This area would have once been

Observing meadow species above the village of Tatev





Roadside hay meadow near Jermuk

forested but previous generations had cleared trees to make way for meadows, leaving only fruit trees (*Malus* and *Pyrus*) due to their importance as a food crop. Locals have witnessed bears selecting the fruit trees that are particularly good to eat and even breaking the branches of undesirable ones.

Over the last century Armenia has seen dramatic deforestation due to increasing population, urbanisation and an energy and economic crisis in the 1990s where trees were cut on an enormous scale for fuel. The Plane Grove State Sanctuary in Southern Armenia is an Important Plant Area covering 80 hectares making it the largest relict plane grove in the Caucasus. It is a unique ecosystem of *Platanus orientalis* L., another endangered species included in the Red Data Book of Armenia. The plane trees can be found growing on both sides of River Tzav, with an average age of approx. 500 years but many could be up to 1,000 years old. In the village of Nerkin Hund a local

showed us one of the oldest trees; hollow but strong and healthy. There was evident gratitude and respect in the village for these trees, they are part of the community providing shelter for families during conflict.

In the North where humidity is higher and temperatures are cooler we visited a relict Yew Grove of *Taxus baccata* L. The trees here are struggling and Beech are beginning to take over, this prompted a debate on the role of woodland management which in the UK is part of our landscape history. By contrast in Armenia there is resistance to human intervention in these precious natural areas, perhaps understandably considering the losses they have suffered in the last Century. It may be that these relict groves remain untouched to continue with natural succession, and the loss of the yew trees here becomes inevitable. Armenia has been a fantastic country to visit, seeing many familiar plants in such varied habitats has sparked ideas about horticulture in the UK. Working alongside a botanist and learning from local people about the country and its floristic diversity has been invaluable.

South Korea Trip

by Katarzyna Babel

In May 2019 I had an amazing opportunity to travel back to South Korea thanks to the generosity of the Kew Guild and the RHS Coke Trust Bursary Fund. I headed to the country with a plan of visiting ecological parks, botanical gardens, arboreta, national parks and, the cherry on the cake, the Hallasan National Park on Jeju. My first stop was Busan where I saw the Daejeo Ecological Park, the Geumgang Botanic Garden & Geumgang Park and the famous Haedong Yonggusa Temple (situated on a seashore, not in the mountain where most Korean



Rhododendron weyrichii

Buddhist temples are located). That followed by a trip to Daegu with its rich tradition of using plants for a medicinal purpose (Yangnyeongsin Museum of Oriental Medicine and the Oriental Medicine Festival with music 'til late – my accommodation was located next to the market where the festival took place!) and wonderful parks: Apsan Park and newly created Daegu Arboretum. During the trip, I had also spent time hiking and looking at plants in three national parks: Jirisan, Gyeongju, and Hallasan.

Every time I visit South Korea I am more and more impressed with the energy that people here put into creating wildlife and community friendly green spaces. The Daegu Arboretum's room-like beds with examples of different type of vegetations, the streams of water peacefully running through them, a glasshouse full of temperate zone plants and a traditional Korean garden would not let you know that it used to be a landfill. Only a museum located in the arboretum telling its history and education programme mainly destined for school children brings closer the issue of broken habitats and how to restore the nature back. The national parks of South Korea are always places of a great wonder and plant photography hunting. Gyeongju National Park, listed 10th most important historic site by UNESCO in 1979, is full of history going back to Silla period (57 BC – 935 AD). The national park, with its well-designed paths going through the wildness, small Buddhist temples found in carefully chosen places (and sometimes surviving for hundreds of years) is a beautiful example when people influence a place for thousands of years but are capable of respecting it and keeping it in almost pristine condition.

I spent my last days on Jeju, visiting Jeju Ecological Arboretum, Halla Arboretum, and Hallasan National Park. The last one I hiked in 2015 and I was interested in how a project of *Abies koreana* restoration is progressing. This endangered endemic species to South Korea has been in decline for many years. On Jeju Island, the fir forest has been suffering from climate change (causing stronger winds, typhoons, drought), seedlings being eaten by Siberian roe deer and over competed by the dwarf bamboo (*Sasa quelpartensis*). I was shown places where seedlings were planted in groups (with the idea that only the strongest will survive) and kept clean from the dwarf bamboo by the Hallasan Park staff until they grow taller than bamboo plants.

The whole trip was for me full of optimism in the human race – after all, there are people who spent their time weeding through seedlings of an endangered species to keep them at a safe height in the mountain! And any amount of hiking to do it will not stop them!

2019 U.K. Botanical Expedition to North West Vietnam

(R.B.G. Edinburgh, National Botanic Garden of Wales, Wrest Park Garden, Cambridge Botanic Garden & The Institute of Ecology & Biological Resources, Hanoi)

by Richard A. Baines (Curator of Logan Botanic Gardens)

Expedition Brief

- To collect living material from a wide range of plant species principally in the form of seed, that are located in the Hoang Lien Mountain Range & Hà Giang Provinces in Northern Vietnam.
- To allow the resulting plants to be grown at RBGE, National Botanic Garden of Wales & Cambridge Botanic Garden.
- To collect conifers, members of *Gesneriaceae* and *Begoniaceae* for study at the Royal Botanic Garden, Edinburgh.
- To collect *Rhododendron* species for scientific research by Mr David Chamberlain, Botanist, RBGE.
- To carry out research on the identification and species distribution of the genus *Magnolia*.

- To carry out specialist field research that will lead to a better understanding of species distribution and conservation issues that threaten plant populations.
- To continue to deliver lectures on the flora of N.W. Vietnam to promote conservation of plants from this area and raise public awareness.

Participants

- Richard Baines (Expedition Leader) is Curator of Logan Botanic Garden and has a particular interest in Rhododendrons, Magnolias and woody plant material.
- Andrew Luke is Head Gardener at Wrest Park, (English Heritage) and has extensive experience in propagating woody plant material.
- Dr Ángela Cano is Assistant Curator at Cambridge University Botanic Garden and has a particular interest in palms.
- Will Ritchie is Curator at the National Botanic Garden of Wales and has a particular interest in Begonias and ferns.
- Hazel France is a Senior Horticulturist at RBGE with an interest in sub-tropical plants.
- Nguyen Van Du is a Senior Botanist at The Institute of Ecology & Biological Resources in Hanoi with a specialist interest in *Araceae*.
- Thanh Trinh Xuan is a Horticulturist at Me Linh Station for Biodiversity.
- Toan Le Chi is a Taxonomist working with DNA barcoding, focussing on *Loranthaceae*.
- Manh Nguyen Hung is a Researcher in plant ecology, biodiversity and conservation.

Summary

Two of the aims of the expedition were to promote collaboration between U.K. Botanic Gardens and to provide young horticulturists with an opportunity to carry out botanical exploration in the field. Each participant brought a unique specialism to the trip which greatly benefitted the field work. During the trip two blogs covering our fieldwork were compiled and released along with regular posts on social media. This information raised the profile for the need to carry out conservation work in Vietnam, a rarely explored critical area on the edge of the Himalayas.

The expedition recorded over 280 detailed collections. Where possible photographic, DNA, herbarium and living plant material were collected mainly in the form of seed. It is likely that we have already recorded several new species that are new to the flora of Vietnam such as *Rhododendron nova* subsection *Argyrophylla* and a new species of *Arisaema*. The joint expedition further cemented the developing partnership between the U.K. and Vietnamese organisations. A book reflecting the two previous trips to Vietnam

will shortly be published and will further help build up an accurate picture of the region's flora.



Rhododendrons carpeting the steep sides of Phan Xi Păng mountain

Many of the plants collected during the expedition such as *Magnolia grandis* are currently rarely observed in U.K. botanic gardens or arboreta. All of the participants found that experiencing plants growing in their native habitats greatly helped them as growers identify the exact conditions

that are necessary for successful cultivation. It was particularly alarming to observe the devastation that is created from targeted forest fires with the resulting lack of diversification and how much deforestation is caused from the intensive cultivation of cardamom. It is hoped that further collaborative work will follow such as describing newly discovered species and the creation of The Me Linh Station for Biodiversity will provide opportunities to work in partnership in coming years.

Rhododendron emarginatum with its starry flowers



Acknowledgements. We would like to take this opportunity to thank the following Organisations and Institutes which made this expedition such a success, as without their support and contributions we would not have been able to participate. The Royal Botanic Garden Edinburgh Expedition Committee, the RHS Bursary Committee, the Eve Bennett Trust, the Stanley Smith Horticultural Trust, the Kew Guild & the Hardy Plant Society for their generous financial support. The trip would not have been possible without the help and support of Nguyen Van Du and his colleagues at The Institute of Ecology and Biological Resources in Hanoi. I would also like to thank all the staff at Logan who helped cover the work load in my absence and on my return assisted with seed cleaning, propagation and processing the collection notes and herbarium specimens.

Travel Scholarship to Botanic Gardens in the North East of America by Richard Choksey

My journey to the United States was planned as part of the research for a dissertation on the role that Botanic Gardens can play in supporting community gardening networks. Botanic Gardens in North East USA have played an important supportive role for community gardening networks for several decades. This serves as an interesting contrast to the UK, where supporting community gardens is not generally treated as a core element of the mission of botanic gardens, with the notable exception of Royal Botanic Garden Edinburgh and others.

Aims and Objectives. Several subsidiary questions emerged from my dissertation title and these formed the basis of my research:

- How do community gardening programs fit into the mission of a Botanic Garden?
- What kinds of support are available/necessary? Horticultural support? Networking opportunities? Plant giveaways?
- What is the importance of connection and communication between projects and how can botanic gardens facilitate this?
- Are there any cultural barriers that prevent collaboration between horticultural institutions and grassroots community gardening movements?

My intention was to conduct a combination of reflective observation, semi-structured interviews with project leaders and questionnaires to establish the forms of support available, the comparative effectiveness of each, and obstacles to collaboration between public gardens and community groups.

Description of Activity. The majority of my research gathering activities involved recorded interviews with professionals involved in supporting community gardening networks, and community gardening project leaders. In New York I spoke to Maureen O'Brian, Community Field Manager at Brooklyn Botanic Garden (BBG) and Ursula Chanse, Director of Bronx Green-Up and Community Horticulture at New York Botanic

Garden (NYBG) to hear the perspective of practitioners working within Botanic Gardens. I contacted GreenThumb NYC, a section of the NYC Parks department involved with organising, orchestrating and monitoring community gardens in New York. My interviews with Bill LoSasso, (Director), and Mara Gittleman (Workshops Coordinator) provided an important independent assessment of the contribution that Botanic Gardens make on a citywide level. Finally, I spoke to Jiwon Choi, a Brooklyn community gardener who provided a grassroots perspective on the work of BBG. I also circulated a questionnaire on the importance of Botanic Gardens to community gardeners at a pruning workshop in the Lower East Side organised by GreenThumb NYC.

In Philadelphia I travelled to Bartram's Garden to speak to Chris Bowden Newsome onsite at Sankofa Community Farm. I then interviewed Charlyn Griffith and Stanley Morgan both of Soil Generation, at the Farm in the City, a Pennsylvania Horticultural Society (PHS) funded project to promote the voices of urban farmers and community gardeners in the city. Following this I spoke to Justin Trezza, Director of Garden Programs at the PHS. This meant I heard from both community leaders and a representative of a horticultural institution, which provided interesting material for a discussion on barriers between the two.

In Detroit, I met with Patrick Crouch of Earthworks Urban Farm and Mark Covington of the Georgia Street Community Collective to discuss the needs of urban farmers in the city and the possible role of horticultural institutions. I also met with Ron Smith of the Detroit Garden Center and heard about how they relate to urban farmers in the city. In Chicago I met with Eliza Fournier, Program Director at Windy City Harvest, a community gardening program run by Chicago Botanic Garden. I met with Kristin Brock Outdoor & Environmental Education Manager at Chicago Park District and Robin Cline, Assistant Director at NeighborSpace Urban Land Trust to get an understanding of the wider landscape in which the Windy City Harvest program operates. Finally, I met with Naomi Davis President of BIG - Blacks in Green and founder of the West Woodlawn Botanic Garden and Village Farm Initiative.

Outcome and Results. My stay in New York provided the most information directly relating to my dissertation title. This is unsurprising as community gardening is well established in the city and both NYBG and BBG treated it as imperative that the garden serves the community in which it was situated. Both gardens provide horticultural training through workshops and courses, as well as conducting site visits to discuss problems community gardeners are facing and establish the needs of the network in terms of training and support. Another important role that both gardens played was to facilitate networking between community gardeners, by making community gardeners aware of sources of knowledge or resources within the network, and by hosting events such as Brooklyn in Bloom and NYBG's Harvest fair that act as a platform for networking to occur. Staff at GreenThumb gave great praise to the work being done and described the gardens as 'universities of horticulture', that also are often 'holding space for community gardeners to be in community'. Furthermore, it was made clear that it is necessary to have dedicated staff regularly out in the community to build relationships and establish trust.

The main theme to emerge during my conversations with Chris Bowden Newsome and the members of Soil Generation, was the need to understand cultural barriers that exist with marginalised communities (where community gardening is most prevalent) and horticultural institutions, particularly the history of racism in the USA. All of these interviewees framed community gardening and urban farming as part of a wider movement to build resilience amongst communities of colour, using culturally appropriate crops and spiritual engagement with the land to facilitate conversations about the history of

discrimination faced by these communities, and as a means of empowering those communities to move forward in a sustainable direction. Justin Trezza at the PHS emphasised his desire for his institution to be an ally to communities of colour, and listed a number of ways in which it contributes, by providing horticultural training and consultation similar to NYBG and BBG. However, it was noted that there is a gulf in understanding between the institution and communities of colour that is necessary to address before closer collaboration can emerge.

In Detroit the most conspicuous feature of my research was the absence of a significant horticultural institution able to provide horticultural training and support. Instead, the urban farming community relies on mutual support, facilitated by an organisation called Keep Growing Detroit. One of the elements of this support includes regular meetings between urban farmers across the city to share knowledge, skills and highlight resources. Keep Growing Detroit also coordinates the growth of a large number of plant plugs that are then distributed to members of the network at local hubs, providing another opportunity to network.

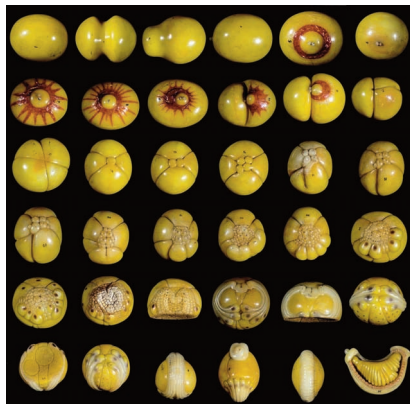
I encountered significant build infrastructure investment during my tour of the Windy City Harvest sites across Chicago with Eliza Fournier, foremost of which was an aquaponics installation at 'Farm on Ogden', intended to demonstrate best practice of food production in an urban environment. As with Philadelphia and New York, the Botanic Garden's community gardening programming involved horticultural training, and many graduates of Windy City Harvest courses have gone on to establish urban farming initiatives of their own. These initiatives continued to benefit from the technical support of Windy City Harvest, and remained connected to the wider urban farming community due to the ongoing relationship. Perhaps the most remarkable encounter I had during my trip was with Naomi Davies of Blacks in Green on my last day in the USA. I was quite astounded by the West Woodlawn Botanic Garden and Village Farm Initiative because it aspires to establish a Botanic Garden that is distributed throughout the community that it serves, with the intention of forging a new pathway to sustainable development within the Black community. Previously vacant lots had been turned into thriving ornamental spaces that recollect and celebrate the history of African American migration from the Southern States. The gardens also serve as educational spaces for the community, where citizens can discover the importance of plants for humanity, and learn about how to steward the environment of future generations. As such, this distributed Botanic Garden addresses the current environmental crisis at the grassroots, providing an inspiring vision of the future and equipping individuals to take meaningful action at the local scale.

In conclusion, my trip to the North East of America was very fruitful, providing extensive information on the role that Botanic Gardens can play in supporting community gardening networks. My consciousness was expanded with regard to the barriers that exist between communities and horticultural institutions, as was my understanding of how those barriers can be dismantled, most notably in conversation with Naomi Davies, where I glimpsed a Botanic Garden fully integrated into the fabric of the community.

MA Museum Studies at University College, London

by Clare Drinkell

In 2016 I embarked upon an MA degree in Museum Studies at UCL, completing it in September 2018. Having worked with the preserved plant collection in Kew Herbarium since 2002 as a Curator-Botanist I have gained plenty of curatorial experience over the years. Enrolling on the post-graduate degree allowed me to improve upon and develop my work, measured against contemporary practice and theory. Maintaining excellent curation



standards is a necessary and vital role both within the herbarium and Kew science as a whole – key to conducting accurate research into global plant diversity.

Through the first-year course modules I was able to focus and develop skills in curatorial techniques. On the Collections Curatorship module, a highlight was a group object to investigate a collection of unidentified, undocumented and un-accessioned wax teaching models at the Grant Museum of Zoology, London. The outcome resulted in the identification of the embryonic series, providing the museum with verified documentation regarding the model maker and recommendations on conservation of the objects. The research project was exhibited in the UCL Octagon, titled *Spotlight: Illuminating Stories*.

A work placement at Dorset County Museum gave me experience in the environmental monitoring, collection handling, and conservation of the museum's extensive Jurassic Coast fossil collections. At the time of my placement the museum was submitting its own application for a multimillion-pound National Lottery Heritage Bid. The bid was successful, and the museum is currently closed for redevelopment, and due to reopen in 2020.

The second-year modules covered aspects of Museum Management, Museum Communication and Engaging the Public with Science. The Early Egypt Gallery in The British Museum was the subject of an essay focusing on contemporary methods of science communication, concentrating on the interactive 3D autopsy table exhibit of the Gebelein Man. The Constructivism principle to museum learning allows visitors to draw their own meaningful conclusions through being 'active' recipients, using their own skills to study the exhibits in accordance with their personal agendas.

Continuing with my interest in 3D digital imagery, for my dissertation I was drawn back to the collections I work with in Kew Herbarium, specifically the carpological or bulky fruit stored as a supplementary collection to the main herbarium. I questioned whether access to this incredible collection could be improved through interactive 3D digitisation. In recent years the main herbarium specimens at Kew have been part of a worldwide collaborative effort in the digitisation of herbaria, yet the chunky material of the carpological collection has remained largely excluded from digitisation programmes. My dissertation intention is to highlight the benefits of the collection as an identification tool; and demonstrate the benefits of 3D digitisation as an aid for studying the morphological characteristics of specific plant parts, thus, unlocking the information it holds for data analysis. I completed my MA in Museum Studies in September 2018 and wish to thank the Kew Guild for the financial support provided. I look forward to continued development and application of the course to my curatorial work at Kew Herbarium.

Seed Collecting and Research of Fruit and Nut Species in Georgia

by Orla Elliston

I have worked for RBG Kew at Wakehurst for four years in the Asian Heath garden. This area is planned to be re-developed as part of Wakehurst's landscape master plan. I was invited by Ed Ikin, Head of Horticulture at Wakehurst, to go on a trip to Georgia to research

and help collect fruit and nut seeds from native Caucasian trees. In October 2019 I joined Aisyah Faruk, who works for the Millennium Seed Bank as the Country Programme Coordinator for the Caucasus region, on a week long trip to Tbilisi. Our aim was to work with her partners at the National Botanic Garden of Georgia, the Institute of Botany and the National Seed Bank of Georgia to collect seeds from a list of target fruit and nut species. Georgia has an exceptional plant diversity; a real mixture of European and Asian flora. With the help and support of its partnership with the Millennium Seed Bank, the National Seed Bank of Georgia has already been able to bank more than 41% of its native flora.

We spent three days completing fieldwork and seed collecting in areas around Tbilisi including in the Tbilisi National Park to the north of the city. We were mainly focussing on collecting *Pyrus salicifolia* and *Pyrus caucasica* as the Georgian partners had already collected and processed many of our other target species. I loved getting the opportunity to experience the trees in their natural environment, there is nothing quite like pulling up in a car to an open area high up in the mountains and spotting a fruiting pear tree in the distance! It is exciting to think that some of the species we saw in Georgia could soon be growing and producing fruit at Wakehurst. I had the privilege to talk to some of the staff at the National Botanic Garden of Georgia and the Seed Bank to hear about the important work they are carrying out to conserve and protect their native flora. The Institute of Botany is working to educate local farmers and communities on the danger of over collecting and the risks of extinction of wild crops. As well as the great opportunity of seeing plants in their natural habitat and speaking to experts who work with the plants every day I enjoyed experiencing the culture and food of Georgia. I feel that this gave me some idea of what it is like for the local people living around these important Caucasian fruit and nut species.

Pyrus salicifolia fruit



We were able to bring back nine species of fruit and nut trees including *Pyrus caucasica* (Caucasian Pear), *Punica granatum* (Pomegranate) and *Castanea sativa* (Sweet Chestnut). The seeds have been banked in the Millennium Seed Bank but some will be passed on to the propagation team at Wakehurst who can start to cultivate these plants ready to go out into the garden when the Caucasian fruit and nut woodland is developed at Wakehurst. I would like to thank the Kew Guild for awarding me the money which allowed me to go on this trip and experience the extraordinary flora of Georgia.

Visit to the Herbarium at Naturhistorisches Museum Wien (24th – 29th November 2019)

The Genus *Onosma* (Boraginaceae) for the Flora of Iraq Volume 7

by Shahina A Ghazanfar

Onosma L. is a large and complex genus represented by 150–180 species in NW Africa, Europe and Asia but mainly centred in Turkey and Iran. In Iraq 18 species are found where majority of the species are distributed in the mountainous areas in Kurdistan extending into north western Iran and eastern Turkey. K. H. Rechinger collected extensively in this region as part of the area covered in his Flora Iranica. The Kew Guild Award was granted to me to visit the Herbarium at Naturhistorisches Museum Wien (W) for one week to study

and update the account of *Onosma* (Boraginaceae) for the Flora of Iraq Volume 7. Volume 7 is the final volume of Flora of Iraq – it contains 11 families of which Boraginaceae is one of the richest in species. The Kew Guild Award enabled me to study herbarium material, especially type collections at the Naturhistorisches Museum Wien (W) where Rechinger's collections are present. As the major part of the northern mountains of Iraq is covered in the flora region of Rechinger's *Flora Iranica* it was important to study the type material of several taxa that were represented by a single or two specimens at Kew and to validate several taxa present at Kew. As agreed with the Ministry of Agriculture, Iraq, descriptive accounts of all taxa including those for volume 7 will be incorporated on Plants of the World Online (POWO) portal at Kew. Work on this has already started with Volume 5(2) now being processed.

24th – 29th November: Visit to Naturhistorisches Museum Wien. Met with Dr Christian, curator of the Angiosperm Herbarium. I looked primarily through Rechinger's collections of *Onosma*, but also of other collectors from the border areas of northern Iraq and western Iran. I described and updated several taxa and revised the account of *Onosma* for Iraq. I was also able to look at collections of *Symphytum kurdicum* and *Brunnera orientalis*. *Onosma* is genetically heterogeneous with several levels of polyploidy which contributes to its morphological complexity. Overall an attractive genus, it is artificially classified by its hispid hairs (setae): setae arising from tubercles that may be glabrous, bear stellate setae or a mixture of both. In Iraq all three types are represented. Recent molecular work on *Onosma* has shown that *Onosma* as currently circumscribed do not form a monophyletic group (Nasrollahi et al. in Nordic J. Bot. 37: 2019). In Iraq, two species, *Onosma orientalis* and *Onosma rostellata* originally under *Onosma* are now placed in separate genera, *Podonosma orientalis* and *Protonosma* or *Maharanga* – not yet transferred – respectively.

Amongst the 18 species of *Onosma* found in Iraq, three are endemic to Iraq. These are confined to the mountainous region of Northern Iraq at elevations above 1300 metres. *O. angustiloba* is a rare endemic known only from two gatherings – one of these made east of Rowanduz in 1927 by Wilfred Thesiger (writer, traveller, author of “*The Marsh Arabs*” (1964) an account of the indigenous people of the marshlands of southern Iraq) which is also the type specimen (type at the Natural History Museum London (BM)). Eight species are also found in Turkey and Iran and all restricted to the northern region of Iraq. Three species are more widespread, with distribution in Transcaucasia, Palestine, Jordan, Lebanon and Syria. *O. sericea* is perhaps one of the most commonly found in Iraq in the hills and mountain slopes from 260–1180 metres. It's a small statured species with long white hairs and yellow flowers in compact scorpioid inflorescences. It is also found in Turkey, Transcaucasia (Georgia, N & C Armenia, Nachitchevan), Iran, Syria and Lebanon.

Perhaps one of the most attractive species (to a taxonomist) is *O. dasytricha* originally described by the Swedish botanist Edmond Boissier in 1846. The plant is grey-green, covered in dense whitish hairs that arise from stellately haired tubercles. The flowers are golden-yellow with stamens that are included in the corolla. In my revision I have put under *O. dasytricha* a few species that had been described as endemic to Iraq as synonymous to this taxon: *O. latifolia* described by Boissier and Haussknecht, collected by Haussknecht in 1867 from Mt Hawraman, Kurdistan, Iraq and *O. qandilica* described by Rechinger and Riedl, collected by Rechinger from Kurdistan, Qandil in Erbil in 1957. Apart from Iraq *O. dasytricha* is found in Iran. Even though a genus is quite difficult to work with, species such as *O. alborosea* with large (to 35 mm) pink to purple and bluish corollas and *O. echinata* with dense long yellowish hairs are extremely attractive plants which would form pretty plants in temperate gardens.

Succulent Plant Habitats in Kenya: Field Study, August 2019

by Olwen Grace

Succulent plants are the focus of my research programme at Kew: I study the evolution of predominantly African succulent lineages and the significance of succulence as an adaptation to dry environments. The Flora of East Africa region is renowned for its rich representation of succulent plants in diverse habitats. In Kenya, succulent plant diversity is well described in the *Flora* and it is possible to see succulent plants in spectacularly diverse landscapes within a few hours drive of the capital, Nairobi.

In August 2019, I joined an expedition with colleagues to collect and observe succulent plants, notably Crassulaceae, in Kenya. The field trip was led by Dr Emily Wabuye (Kenyatta University and National Museums of Kenya), a botanist with specialist expertise in succulent plant diversity in East Africa. The team included Tim Pearce from the Millennium Seed Bank at Kew, Dr Charlotte Bjora (curator of the Herbarium at the University of Oslo), and two postgraduate students, Gertrude Evusa and Tori Robinson. The objective of the planned field work was to observe Crassulaceae at localities in the eastern region in Kenya and for the postgraduate students to collect plant material for their studies. Travelling in two 4x4 vehicles, we visited areas to the south and east of Nairobi, including localities near Kajiado, Machakos, Thika, Naivasha and Narok. Some of the succulent *Kalanchoe* we were looking for can be found along roadsides growing with other tough species resilient to these rather harsh habitats, whereas others can be found only in more pristine vegetation that requires more effort to get to, away from the bustling towns and major roads.

The unique succulent flora of the inselbergs in the eastern region were of particular interest for this field trip. Our botanising focused on the cracks between mighty boulders where more diminutive succulents grow. Looking up, there were tall succulent-leaved *Aloe* species in copses of thorny (mostly legume) trees – and among these we spotted a diversity of birds, as well as zebra, wildebeest and a few species of antelope. To appreciate adaptations such as succulence, it is vital to observe plants in habitat as this context provides valuable insights into the functional role as well as the contribution to the plant community and the ecosystem broadly. I gratefully acknowledge the help of the Kew Guild towards my participation on this rewarding expedition.

“The World of Horticulture and its Opportunities” Discovery Day for Horticultural Apprentices and Trainees

22nd November 2019, Royal Botanic Gardens, Kew

by The Royal Parks Guild (Richard Flenley)

The past masterclasses and, in this case Discovery Day, have grown from small green shoots some 12 years ago to be a really important platform for those who are starting out in horticulture and, by word of mouth, for those who are just beginning to contemplate possibilities and opportunities. This year’s Discovery Day was held in and around the Lady Lisa Sainsbury Lecture Theatre at the Royal Botanic Gardens, Kew (RBG Kew). The lecture theatre was full with 226 delegates of whom 190 were apprentices and trainees. The programme took the form of talks, discussions, tours and presentations. Participants came from a wide variety of backgrounds and some had travelled considerable distances to attend. The purpose of the day was to draw in a wide range of trainees and apprentices from different organisations, both private and public, and to provide a day of opportunities to learn about possibilities in the wider field of horticulture. For this purpose, the day combined a series of short presentations with the chance to see “behind the scenes” in the

internationally important Royal Botanic Gardens. Mike Fitt (Chair of The Royal Parks Guild) and his support team assembled an excellent and varied agenda of speakers to lead us through short, engaging and sometimes revealing presentations which helpfully demonstrated a range of skills and learning areas as well as routes towards careers. These presentations reminded us how “horticulture” is an ever-widening and world-responsible subject which interlinks sciences, arts, commerce, well-being, environment, sustainability and living. In these fields we are already indispensable in serving our planet.



The day began with registration, followed by an introductory welcome by Mike Fitt, setting out the programme, the allocation of tours for the afternoon session and requests to provide feedback to the organisers so that lessons can be learned, and improvements instigated for future events. Richard Barley (Director of Horticulture, Learning and Operations at Kew) gave a brief summary of the scope of Kew’s work and collections.

Tom Pickering, Nursery Supervisor in the Tropical Nursery at RBG Kew explained how he had completed the Kew apprenticeship scheme and progressed through several fields, eventually alighting in the Tropical Nursery which he claimed was probably the best job in the world (a claim repeated by several others during the day!). Tom confirmed what we all glimpse from the outside; RBG Kew is a truly amazing and inspiring place, but still reliant on teamwork. Tom’s keynote talk was followed by six short and sharp presentations. The speakers had been travelling different routes, sometimes from other careers outside horticulture, and they are at different stages of career progress; but all showed great enthusiasm and complete passion for their place in the horticultural world.

Faye Adams: currently an RBG Kew Diploma student after a career change from dancing and education, via volunteering through Chelsea Physic Garden, and Fulham Palace and Gardens.

Georgi Ennis: qualified in arboriculture at Merrist Wood College, subsequently worked in subcontracting and is now part of the five-person arboricultural team at RBG Kew. A keen champion of Women’s Arb Camps over the last 3 years - just do it!

Cecily Eltringham: having completed her degree, she found gardening by accident and came in through volunteering then joining The Royal Parks as an apprentice. Her presentation showed a huge variety of places and activities within The Royal Parks.

Jason Booth and Daniel Bradley: on behalf of the Institute of Groundsmanship. They explained their respective routes into this more specialised sector but demonstrated the wide range of opportunities in sports clubs, educational centres, professional sports stadia and golf.

Ben Preston: is Head Gardener at York Gate Garden, Leeds. With support from the gardeners’ charity Perennial, he progressed through Historic and Botanic Gardens training to take on the Head Gardener role, leading a team of four at York Gate.

Miranda Janatka: After studying horticulture at Capel Manor College, she moved on to become a Kew Diploma student which led to a role as a botanical horticulturalist at RBG Kew. Since then she has transitioned into journalism and TV gardening. She is now an editorial and content assistant at Gardeners’ World magazine.

Lunchtime Careers Desks. This was informally arranged so that delegates could chat with the “experts” and pick up information about various subjects: Training and careers; Parks, gardens and growing; Sports and amenity turf; Landscape and garden design. Additionally, delegates were invited to pick up a Certificate of Attendance for the day and to complete and submit feedback forms at the conclusion of the day. **The Tours.** Delegates had indicated preferences and were accordingly assigned to tours of particular areas and specialisms within the Gardens. The tours on offer were: Working in propagation - Arboretum Nursery; Working with endangered plants - Tropical Nursery; Garden design in a Botanical Garden; Managing Kew’s tree collections; Dealing with plant health and biosecurity; Working in display glasshouses; Growing and caring for alpine plants; Caring for turf at Kew; DNA and the Evolution Garden. The visits were led by members of RBG Kew staff.

Closing the event, Mike Fitt added his thanks to the Discovery Day steering group and The Royal Parks Guild volunteers who had helped to organise and guide the event. He particularly thanked RBG Kew for providing the venue and their staff who had contributed to make it all work so well. He thanked the Kew Guild, London Gardens Network and Chelsea Physic Garden for their generous sponsorship, and expressed his appreciation of the support readily given by a range



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of organisations. As delegates departed, they were presented with a ‘goody bag’ kindly arranged by the Landscape Show and London School of Garden Design. We hope the event will have encouraged some, and inspired others, to find their feet and future careers in the wider world of horticulture. At the end of the day, Mike asked the question as to whether he should contemplate organising another such Discovery Day in the future. There was unanimous applause and confirmation that he, and we, should certainly do so to enable and encourage another generation of horticulturists. © The Royal Parks Guild.

Royal Botanic Garden Edinburgh Field Course in Tropical Botany

by Rebecca Hilgenhof

In January 2019 the students of the MSc course in Biodiversity and Taxonomy of Plants, including myself, travelled together with the four RBGE course-leaders to Bogotá, Colombia. Here, we met up with our Colombian collaborators from the Botanical Garden Bogotá. The aim of the field course was to enhance our skills in plant identification, ecological surveys, and field collecting techniques. It is organised annually as part of the framework of the RBGE MSc, however, it is also offered to anyone who wishes to strengthen their practical skills in tropical field botany. Colombia provided the perfect setting for the field course, as despite covering only 1% of the Earth’s surface it hosts more than 10% of the planet’s biodiversity. The course was focused in the Colombian Andes, where plant diversification is immense. The area is home to 40,000-45,000 different plant taxa, which counts to about 15% of the global total! Our first base camp was set in Otún Quimbaya, located on the western flank of the Cordillera Central at an altitude of about 1,900 metres above sea level. Otún Quimbaya is one of Colombia’s 53 National Parks.



Pressing herbarium specimens of *Passiflora vitifolia* collected at Rio Claro

With 489 hectares of protected area it is by far the smallest, however it is of great importance as it covers unique pre-montane and montane forests habitats that are home to many endemic plant and bird species. The second location was the Rio Claro Nature Reserve situated at the eastern side of the Cordillera Central, in the department of Antioquia. With an elevation of only 310 metres above sea level this site was far more tropical and therefore home to many lowland genera that we had not yet previously encountered. The reserve itself was established in 1975 to protect the flora and fauna of the unique karstic limestone canyon. A focal point of the reserve is the Rio Claro River, home to the rare Neotropical otter.

Our days were filled with practical training exercises and lectures. The teams (three to five students plus one trainer) left the camp every day, by 8am. We were sent into different areas around the base camps to collect plant material. Often little exercises were in cooperation. For example, one day we were given GPS waypoints and had to find the collection location for that day. Most mornings included the collection of fertile herbarium material, which was accompanied by accurate collection notes and photographs taken in-situ. For each collection DNA material was secured and up to four duplicates pressed. On other days we were establishing transects and identifying the plants within these. In the afternoon each of us had to check over the vouchers taken in the field, identify these as required and upload the collection notes and images onto the database. Each evening we were introduced to the key vegetative identification characters of four to six plant families.

We kept a travel log that would be evaluated at the end and on the last day of the fieldtrip our gained knowledge was checked with a plant identification exam held by Bogotá Botanic Garden. I would like to thank the Kew Guild for their financial support with this course as two weeks later I am proud to call myself not only a horticulturist but also a tropical botanist.

Kyrgyzstan Travel Scholarship Report, 19th June - 4th July 2018

by Alison Legg

Kyrgyzstan is a Central Asian country, bordered by Kazakhstan to the north, China to the east, Uzbekistan and Tajikistan to the south-west. It is a mostly mountainous country with the Tien Shan mountain range running across it. The climate across the country varies greatly from warm continental climate to cold semi-arid climate. This mountainous landscape creates extremely diverse habitats across the country, making it an area of high ecological diversity with a rich and varied flora. My main aim in travelling to Kyrgyzstan was to observe the native flora and compare different habitats.

The most dominant habitat across Kyrgyzstan is steppes and montane grassland. These naturally occur when it is too dry for a forest to be supported, often in combination with extreme lows in winter temperatures. The steppe ecosystems are dominated by grasses, shrubs and herbaceous perennials. I have a keen interest in alpine flora and herbaceous perennial species and I wanted to observe them growing in these perennial meadow or steppe habitats. I hoped to find different species of *Perovskia*, *Eremurus*, *Allium*, *Geranium*, *Ligularia*, *Salvia* and *Trollis*. These are genera that are commonly grown in the UK and I wanted to compare their natural growing environments. Travelling with my



A species rich meadow at Chong Kemin National Park

colleague, Andrea Topalovic-Arthan, we joined a botanical tour organised by the International Hardy Plant Union for ten days. We then organised a driver/translator from ITC Asia Mountains for a further five days. Our travel through the country took us to different nature reserves and national parks across Kyrgyzstan to see wide range of natural areas and observe native plants.

The botanical tour was led by experienced guides Brian and Meerim Kabbes. Starting in the capital city Bishkek we travelled east, exploring different locations around Chong Kemin National Park. In the flat valleys of Chong Kemin, traditional agriculture meant there were many species rich and floriferous meadows characterised by *Echium vulgare*, *Salvia deserta* and *Onobrychis arenaria*. We travelled on to Lake Issyk-Kul, which in contrast was semi-arid with sparser vegetation adapted to the dry conditions. After travelling back to Bishkek we had a further visit just south of the city to Ala Archa National Park. A gorge with a river fed by snow melt running through it, it was a much more verdant habitat able to support a forest dominated by the species *Abies schrenkiana*. With our driver, Akimbek, we travelled south from Bishkek to the second largest city Osh. Our route took us through the Too-Ashu mountain pass at 3130 metres above sea level down through the open grasslands of the Suusamyr valley. As we travelled further south from Sary Chelek Nature Reserve, the culture of fruit and nut trees became much more apparent. Particularly in the village of Arslanbob that is surrounded by the largest wild walnut forest (*Juglans regia*) in the world. As we arrived at Osh the landscape became much more arid again, on a visit to Sulayman Mountain we observed Pistachio trees (*Pistacia vera*) and *Allium oschaninii* growing out of cracks in the bare rock.

My main aim of observing a wide range to plant species and habitats was easily met. Travelling to the north-west and on to the south-west of the country I saw dramatic changes in the landscape and observed a wide range of different plant species. Brian and Meerim Kabbes were very knowledgeable on the native flora and able to identify all the plant species found. When travelling to Osh we were able to use the knowledge gained from them to identify plant species ourselves.



Limonium kaschgaricum growing in semi-arid conditions near Lake Issyk-Kul



Delphinium semibarbartum growing in grassland near Sary-Chelek Nature Reserve

The genus *Eulychnia* in the Atacama Desert of Northern Chile

by Felix F. Merklinger

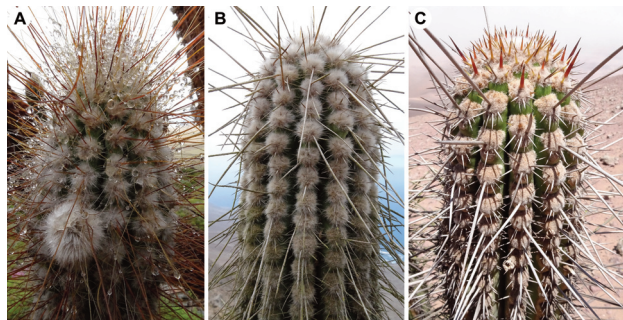


Eulychnia iquiquensis at Alto Chipana, Northern Chile

In February 2017 I began my studies as a PhD candidate at the Nees Institute for biodiversity and taxonomy of plants at the University of Bonn in Germany. The thesis with the title “spatio-temporal gene flow among plant populations in the Atacama Desert of northern Chile” will be submitted at the end of January 2020. Four plant genera in four families are under investigation, these are *Eulychnia* (Cactaceae), *Tillandsia* (Bromeliaceae), *Huidobria* (Loasaceae) and *Ophryosporus* (Asteraceae). The project is funded by the German Science Foundation (SFB1211, <https://www.crc1211.uni-koeln.de>).

While conducting field work in the Atacama Desert I realised that the taxonomy of the genus *Eulychnia*

posed some problems, because it was only with some difficulty that names could be assigned to the plants collected. Although the names are of minor importance in the study to detect gene flow between populations, it would nonetheless be a relatively easy task to review the taxonomy of this genus, since we already sampled at such a large scale through its entire range. Because of my background at one of the world's foremost taxonomic institutions, Kew, I developed the wish to tackle the genus' taxonomy and to include this into the studies toward my PhD. I applied for funding with the Kew Guild to visit Chile again and fill the last gaps in making the necessary observations and collections, and to work out a taxonomic concept for the genus. *Eulychnia* is distributed along the coast of northern Chile and with one species in southern Peru. The last taxonomic account including a description of several new taxa was done by Friedrich Ritter in 1980. Since then, only sporadic work has been done on *Eulychnia*, culminating in a paper by Larridon et al (2018) who presented a molecular phylogenetic study, an ancestral area reconstruction and a key to the species. However, the study was based on an incomplete taxon dataset and it used six molecular markers (chloroplast) only. In our work, we use genotyping-by-sequencing, a method of next generation sequencing, which allows the screening of the entire genome for single nucleotide polymorphisms (SNPs; Elshire, 2011). With this method we can produce a much larger dataset and refine the statistical analyses in order to calculate not



Eulychnia iquiquensis as currently accepted, showing varying degrees of areolar felt. A) near Chañaral (formerly *E. saint-pieana*), B) near Antofagasta, Morro Moreno (formerly *E. morromorenoensis*), C) near Iquique, type locality of *E. iquiquensis*.

only phylogenetic trees but also to investigate hybridisation, gene flow within populations and gene flow between populations.

In October 2019 I embarked on a journey to Chile together with my co-supervisor Dr Federico Luebert. We travelled from Santiago to Iquique and on the way collected the necessary samples of *Eulychnia*. In total, the type localities of all seven currently accepted

Chilean taxa were re-visited in order to take measurements and to understand the delineation of species we would like to propose. In addition, we visited key sites where we think that the taxa there should be viewed as species in their own right. We made 25 herbarium collections of *Eulychnia* including material for DNA extraction. Voucher duplicates for Kew were collected and will be sent to the herbarium at Kew.

Eulychnia is a genus with a very recent radiation in the last 2-7 million years (Merklinger et al., in prep.), and the speciation processes could be seen as “in progress”. Taxa that are currently considered species are more or less geographically distinct, however there are “in-between-forms” between these “species” and the morphology would be best described as a continuum. For example, one important character is the areolar felt. In some plants this felt is very short and dark, in others it is long, white and dense. Currently, plants from different regions/populations with a varying degree of areolar felt-length are lumped into one species, *E. iquiquensis*. However, combined with other characters and based on molecular phylogenetic results, one could equally split *E. iquiquensis* into several separate taxa, as has indeed been done in the past by Ritter (1980). Our taxonomic concept will not only consider morphology and the phylogenetic grouping of taxa, but also take into account the geography and a time scale of speciation. Besides a taxonomic concept, of course the process of speciation will be discussed. Here the population genetic analyses come into play as we can see trends in the speciation and diversification of various plant taxa in the Atacama Desert in correlation to the evolution of aridity and the uplift of the Andes (the sister genus of *Eulychnia* is *Austrocactus*, which occurs mainly east of the Andes). A paper manuscript is in progress which will form part of my PhD thesis. I am indebted to the Kew Guild for support with this project and most importantly, continuous support throughout the years.

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The Widespread Implications of Habitat Restoration in the Azores

by Ana Oliveira

Every student who is about to graduate wonders about what to do next. In my case, the



Figure 1

decision was made: I was going to travel to further my knowledge in nature conservation. Heading to Asia was on the menu, nevertheless, I found it increasingly hard to justify the carbon footprint of a long-haul flight. I opted for a compromise solution and headed to the Azores for a month and worked in the Azoran bullfinch conservation project with SPEA (Portuguese Society for the Protection of Birds). The Azorean bullfinch (*Pyrrhula murina*), or

priolo, is a passerine bird endemic to São Miguel, the largest of all the nine volcanic islands of the archipelago. Its habitat is the laurel forest, and it feeds largely off seeds, fruits, flower buds, and some invertebrates. However, this ecosystem is largely threatened by invasive species (over 60% of the Azorean vascular flora), *Cryptomeria japonica* plantations, or pasture for dairy cattle. The main invasive species include *Clethra arborea*, *Hedychium gardnerianum*, and *Pittosporum undulatum*, amongst others. As the Azorean climate is sub-tropical, plant growth rates are also high, or very high. This, together with other human activities, has put the priolo at risk of extinction. In 2003 there was an estimate of only 400 birds. However, thanks to the conservation efforts, the population increased to over 1000 in 2012. The key intervention was the restoration of the laurel forest - a hugely challenging task. The forested areas sit entirely in extremely steep mountains with very limited access (Figure 1) and the scale of the invasion by alien species means an abundance of seeds ready to germinate in cleared areas.



Figure 2



Figure 3

The restoration involves three steps: controlling invasive species, planting native plants, and preventing the areas from being invaded again. The first step is achieved by a combination of physical removal with local applications of glyphosate. Smaller plants are cut, followed by an application of glyphosate in the stem. Other methods have been tested, with or without herbicides, however most invasive species are able to regenerate. Mature trees are wounded with chainsaw cuts in the main trunk, followed by glyphosate applied in the wound. The trees die standing, and are later removed when the biomass is reduced (and the wood lighter). This has a much lesser impact than dragging them out with the canopies intact. The cleared areas are then densely planted with a mixture of nursery grown natives best suited to each site. The grown plants germinate from seeds collected in the wild.

Another target is the prevention of landslides and erosion control. As the archipelago is subject to frequent rainfall and wintery tropical storms, the pumice soils are very prone to runoff, especially after plants have been removed. Instead of going for concrete as retention material, SPEA uses bioengineering. In this case the placement of timber structures so native plants can establish and naturally hold the soil. The frames (Figure 2) or micro dams (Figure 3) are planted with species according to their root type, and the whole area is hydroseeded to 'glue' the seeds against the bare soil. The wood used is from invasive trees removed nearby. As the sites are not always easily accessible, even if they opted to source materials from elsewhere, they would hardly reach some of the sites. As the structures only need to last long enough for the plants to establish, untreated wood is not an issue either. This approach solves three problems in one go: habitat restoration, erosion control, and control of invasive species. The end result is both functional and aesthetically pleasing.



Figure 4

The slopes look like wonderful vertical gardens! Once the habitats are restored it is necessary to gauge their impacts, not only in the priolo population, but in other environmental indicators (vegetation cover, water quality, etc). Fortunately, I had the opportunity to participate in several field trips, including bird monitoring.

As it was September, we surveyed the juvenile birds before they get their adult feathers. The surveys take place in specific hour slots and specific locations where one does a set course

to ensure consistency when assessing the population size and distribution. Fortunately, priolos are very curious birds, and they usually approach humans briefly before heading off again. They also have a very distinctive whistle, nevertheless, they are very scarce, and juveniles even more so. However, I was lucky enough to photograph one! (Figure 4) Juvenile photos are rare, so any extra ones are always welcome. As my legs got conditioned to all the steep hiking, I also witnessed the difference SPEA is making in the ecosystems. The preserved laurel forests are a rich mosaic of shrubs, small trees and lush carpets of Sphagnum moss. The invaded areas are monotonous, and often populated by no more than three or four species. I visited a restored stream for which water quality was compared to an unrestored one. The contrast in floral diversity is easy to see.

In addition to the conservation efforts, SPEA also has initiatives to raise the awareness and engage the local population about conservation. There is an interpretation centre and they attend schools and science fairs. I participated in the biggest science fair in Azores, the Macaronight, for which I co-created and ran a seed sowing workshop of endemic species. Educating students of different ages was challenging, but very enriching. Another valuable experience. Other than working with SPEA I also did some sightseeing and explored other aspects of Azorean culture. I saw banana trees in people's gardens, and the orchards and vegetable plots surrounded by hedges to protect the crops from the blustery storms. I also visited the historic pineapple and tea plantations. Pineapples have been grown since 19th Century under the similar low ceiling glasshouses. Ancient methods remain, such as burning leaves and twigs for the smoke to "choke" the plants and force them into flowering all at once. Pineapple plants take a whole year to produce a single fruit, hence their high price (4-6€/Kg). They are absolutely delicious, though. Tea was also introduced in the 19th Century, mainly as an alternative crop to the widespread orange groves. Nowadays only two farms remain, both of which can be visited. The clipped plantations are absolutely beautiful and tea growing is naturally pesticide free. Although initially the shrubs were individual spheres and the leaves manually harvested, machinery streamlined the process and plantations transformed into the hedges we see nowadays. It was a joy to roam amongst them, see how tea is processed, and then drink the finished product!

The sub-tropical weather also enables the brightest greens and very lush gardens. I visited all the botanic gardens in the island however, the most impressive was certainly Terra Nostra park. Founded in the 18th Century, one can bathe in the ferric hot springs, and see a wide range of tropical species and aquatic gardens. It was a masterclass in botany and garden design. Overall this trip was a revelation. I gained precious insights and knowledge about conservation and management of nature reserves and learned a lot about another culture and way of living. This knowledge will certainly serve me well in my future career (including a job offer to work with SPEA). I couldn't certainly achieve this without the generous support of the Kew Guild, and I will always be grateful for it.

Exploring the Wonders of Colombia

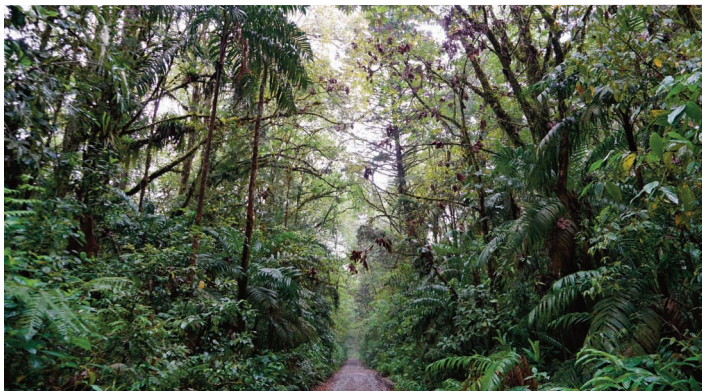
by Mathew Rees

This report was prepared as part of the award from the Kew Guild to help me finance my Masters in Biodiversity and Taxonomy of Plants at the Royal Botanic Garden Edinburgh. I would like to sincerely thank the Kew Guild for providing me with this opportunity.

Colombia, the country named after Christopher Columbus, is beautiful and diverse, located right at the tip of North-West South America. It's roughly the size of France, Spain and

Portugal combined and has an estimated 30,000 plant species (including over 4,270 orchids), twice that of all of Europe! Colombia has a population of around 46 million people, most of which (80%) is concentrated in the Andean region. The largest expanse of land is located in the East of the country, in the lowlands plains of the Llanos and 54%

Road through Otún Quimbaya National Park, one of Colombia's 53 NP's and recovered from a region of coffee farming



of the total area is rainforest. Recent negotiations between the paramilitary groups and the government have opened up many areas to development, thus allowing roads to be built into virgin territories. The Botanic Garden José Celestino Mutis, in Bogotá has partnered with the University of Bogotá to explore and collect these areas before it is too late.

Purpose of the trip. The MSc module in Tropical Biodiversity is led by Dr. Tiina Särkinen (South American Biodiversity Researcher) and Dr. David Harris (Curator of the Herbarium at RBGE). It teaches students how to identify a range of frequently encountered tropical families by focusing on vegetative characters. The course also provides hands on experience with ecological and quantitative study for habitat surveys. Finally, learning how to make a five star herbarium specimen in tropical conditions is key to a successful collecting trip. The course lasted two weeks in January 2019, exploring mid elevation



The eyes of *Columnea* sp. (Gesneriaceae)
are guarding the forest



Voyria tenella Hook.,
a parasitic Gentianaceae

montane forests in Otún Quimbaya National Park (department of Risalda) before moving to the hot lowlands of the Rio Claro Reserve in the Magdalena valley. Otún Quimbaya was established in 1996 on old coffee plantations and has circa 500 hectares of pre-montane and montane forest (around 1900 metres

elevation). The climate is cool and the moist air is ideal for the Yarumo blanco (*Cecropia tealba*) an emblematic tree of the region which, contrary to other species of *Cecropia*, is indicative of old growth forests. Rio Claro is located on the eastern side of the Cordillera Central in the department of Antioquia. It is a privately owned reserve and was created in 1975. The site is built around the river of rio claro (the “clear river” due to its exquisite transparency) and some karstic gorges that are home to some rare fauna such as the nocturnal Guacharo (oilbird). The flora is equally spectacular with several rarities including parasitic plants.

Discovering Wakehurst’s Moths - the Hunt for a New Species

by Steven Robinson (Loder Valley Nature Reserve Warden)

Back in 2018 I was contacted by Steve Wheatley from Butterfly Conservation who was in search of the rare Heart Moth. Wakehurst was chosen along with 11 other sites in Southeast England to set up a moth trapping session. The Heart moth is named due to the heart-shaped markings in the central part of the forewings. Once widespread in central southern and south-eastern England it is now only found in a handful of sites. The species is associated with mature oaks where the eggs are laid and the larvae feed on the foliage. So, this is where we set the two moth traps one night in June under two mature oak trees. Alas no Heart moths were found but we did have a count of up to 60 different species. Of the 12 sites surveyed six Heart moths were found, five of these at Harewood National Trust property in Surrey and only one at their stronghold site at Windsor Great Park where they had 20 light traps.

This got me thinking about recording moth species at Wakehurst as very little had been done if any. In Sussex there are around 2000 species and Bob Foreman our local moth specialist estimates that at Wakehurst with our diverse habitats we could support up to 1000 species. To achieve this level of surveying will take many trapping sessions over a long period of time. So for Wakehurst to have its own moth trap has meant that I can set the trap in the evenings and for Bob to come in and begin to identify the species.

Trapping has begun with an aim to trap all year round even through the winter months if the weather is suitable. Moth identification is highly skilled as many species especially



the micro moths may need dissection to confirm their correct identification. So far, we have recorded around 200 species which will increase with every moth trap. Of note so far, we have had the Twin-spot carpet with only 21 records for all of Sussex. Another interesting species is a non-native species from Australia which is believed to have found its way to the UK from imported ferns. The first record was in 2009 in Dorset and the Wakehurst record is the most westerly found in Sussex. Also, it's not only moths we catch as many light loving insects are attracted to the trap. We caught the *Opheltes glaucopterus* wasp which was only the third record for Sussex.

My aim is to trap every two weeks over the coming year and cover as many varied habitats across Wakehurst. With need for a generator to power the moth trap some of the sites will require a little blood sweat and tears to get the generator to more wild remote parts of Wakehurst. Bob is sure that we will have that “WOW” moment in the trap as Wakehurst has such a wild unrecorded landscape. Is there a new species out there? I’m sure there is!

The Wildflower Meadows of Kyrgyzstan

by Andrea Topalovic Arthan

Thanks to a generous contribution from the Kew Guild I was able to undertake a broad study of the wildflower meadows and steppes of Kyrgyzstan, and survey the range of native wildflower species found in these habitats.

I began in Chong Kemin National Park within the Tian Shan Mountain Range. This area has steppe vegetation and many plant species that are typical for this part of Kyrgyzstan. Some of the plants I observed were

Apocynum lancifolium, *Artemisia absinthium*, *Artemisia dracunculus*, *Hypericum perforatum*, *Lamium turkestanicum*, *Limonium gmelinii*, *Verbascum songaricum*, *Glycyrrhiza glabra*, *Mentha asiatica* and *Onobrychis arenaria*. Next were the mountains and steppes of Temir Kanat – home to many alpine and robust herbaceous perennials. The meadows in the lowlands were lush with examples of plants such as the orchids *Dactylorhiza salina* and *D. umbrosa*. Clumps of *Lindelofia stylosa* looked very delicate in the summer breeze along with *Phlomis pratensis*, *P. oreophila*, *Hedysarum songaricum* and *Potentilla phyllocalyx*.



Artemisia steppe

Lake Issyk-Kul is located high in the northern Tian Shan in the east of the country. In 2001, Issyk-Kul was included in the World Network of Biosphere Reserves by UNESCO. Within the Issyk-Kul area is Skazka Valley, a dry but colourful valley where plants such as *Perovskia scrophulariifolia* were seen. The plants found here are adapted to living in harsh dry conditions. In lower altitudes we observed plants such as *Haplophyllum acutifolium*, *Dracocephalum bipinnatum*, *Caragana leucophloea*, *Dracocephalum nutans*, *Ephedra glauca*, *Perovskia scrophulariifolia*, *Limonium kaschgaricum*, *Asparagus persicus* and *Centaurea turkestanica*.

Alamedin Gorge is a striking feature within Alamedin National Park, 30 kilometres south of Bishkek. Due to higher rainfall, the area has forests of *Picea schrenkiana*, *Abies semenovii* and *Betula tianschanica* trees. *Juniperus spp.* and *Salix spp.* are scattered across the gorge's green meadows along with wild bushes of *Ribes nigrum*, *Prunus spinosa*, *Rosa spp.* and *Berberis spp.* Flora alongside the woodland verges was very rich and in particular it was impressive to see drifts of *Aconitum leucostomum*. The Sary-Chelek Nature Reserve was established in 1959 and designated as a World Biosphere Reserve by UNESCO in 1978. The main habitats are forests, meadows, steppes, and scree with some aquatic areas. There are nut and fruit forests with *Juglans regia*, *Malus spp.*, *Pyrus spp.* and an understorey of *Prunus divaricata* and



Steppes of Temir Kanat

diverse wildflower meadows. The Arslanbob Mountain Range is renowned for its beauty and rich and diverse flora. I enjoyed exploring its most well-known feature – the large Walnut forest (*Juglans regia*). The walnut woodlands were truly majestic. The woods are partially managed and partially left to their own devices. Some of the dead wood is collected and used as domestic firewood; the rest is left to decay. Cattle graze the woodland floor. The walnuts are collected in autumn and sold at markets all over the country.

I really enjoyed this journey through Kyrgyzstan and have significantly broadened my knowledge of the country's diverse flora. Being able to visit many different parts of the country allowed me to observe how the flora changed with the terrain and altitude. This was most noticeable in the Chong Kemin National Park, where I observed three distinct types of meadows in relatively close proximity. These were the lowland flower meadows (used for hay), the lush *Artemisia* steppes and the low-growing *Fescue* steppes (both grazed by livestock). Each of these environments had their own unique visual impact, however the *Artemisia* steppes also had a remarkable scent, which could only be appreciated by walking amongst the vegetation. It was great to see the influence of different microclimates on plant diversity and distribution, for example in the Sary-Chelek Nature Reserve. As well as a forest of fruit trees, the meadow understorey included diverse, lush vegetation. This was quite different to the vegetation seen around Lake Issyk-Kul where the sparse, desert-like habitat supported plants adapted to these drier conditions.

I was fascinated with the variation of plant communities found in each location and this has sparked an interest in plant ecology. These observations were also a huge benefit to my Kew Diploma dissertation on urban meadows. By observing meadows in their natural state, I was able to appreciate and understand how they are interpreted in naturalistic urban planting schemes, such as the Olympic Park in London.

Armenia Trip, June 2019

by Maud Verstappen

With Aisyah Faruk, a scientist who works in the seedbank at Wakehurst, I went on a work trip to Armenia on the 21st June 2019 until the 28th June. We have been researching and studying flora of the Caucasian region, gathering inspiration for the future Silk Road landscape design at Wakehurst. The first few days were in the Khachik community, and the following days we had field days. We also had one full day in Yerevan (the main capital) to see the Botanical Garden and to discuss projects with our partners.

My target was to take lots of pictures of the flowers, plants and landscapes. Getting ideas and a sense for our garden at Wakehurst. Armenia is a very mountainous country with a big lake "Lake Sevan". Some people even call it the sea, as you can't see the other side of the lake. The climate is very hot in the summer, it can go up towards 39/40 degrees. While in wintertime it can be absolutely freezing cold. Think of minus -30 and -46. The first day of our trip was an important one, as we would go for a four-hour drive to a community called Khachik where we would meet our Armenian partners and people from the community. While meeting the community, there was a table with loads of products from dried plums to a cordial made from wild hawthorn and rosehips. During the meeting, the community people and our partners discussed the importance of biodiversity and sustainable harvesting and learnt the local names and uses of some potentially rare fruit and nut species found in the area. The meeting ended with an activity of how to sell your product. People from the community would stand up and sell their product. This was led by one of our Armenian partners, social scientist Emma.

The second day we spent on the demonstration plot. Here the community will have access to plant important fruit and nut species. The importance here is to give the

community access to the species without interfering with the wild populations. Some of the plants which the community will be planting here are:

- *Berberis orientalis*

- *Rosa hemisvariga*

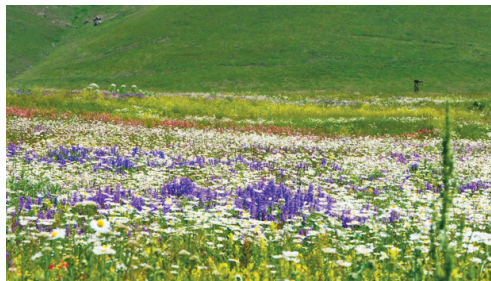
- *Crataegus meyerii*/ *Crataegus orientalis* (I'm not quite sure if they are going to plant this species, but it was on the list)

They created a beautiful sign for the demonstration plot. With explanation about the project in both languages, Armenian and English, it looked fantastic!



Gorgeous Walnut Tree

There were loads of Walnut trees and fruit trees. While driving around and on the roadsides, there were little stalls where they were selling their products. Honey, nuts, fruit, and presented very beautifully. In Yerevan we went to a typical Armenian market with fruits and nuts. It was almost like art displays! They use all their crops to sell it beautifully.



Rich vegetations, with *Astragalus*, *Onobrychis viciifolia*

The days after our visit in the Khachik community we went for our day/field trips. So much variety within the landscapes and hills, but sometimes also just flat fields. And then the amount of plant species was just amazing. One place we stopped in the hills, but surrounded by mountains were lots of orchids growing, it looked stunning! I have also seen lots of *Verbascum*, *Lapulas* (looks like *Forget-Me-Not*), *Astragalus*, *Dianthus*, *Arenaria*, *Sempervivum*, and many more. I found this trip very interesting. So many wild plants, and rich vegetations. The way people really use their crops at the market. So many fruit and nut trees, they use all of it. Great to see their demonstration plot with the sign. It's very nice to see that in a community far away they are so passionate about their crops and to protect the species. And that Kew/Wakehurst is part of this collaboration with the Armenian partners.

The Kew Guild Honorary Membership

Introduction

by Peter Styles

The Fellowship is awarded by the Guild in recognition of those who are particularly distinguished in their careers in horticultural, botanical and plant sciences, mycology and other related disciplines. The Fellowships are restricted to 25 at any one time and there are currently 19 Fellows. The Awards Scheme, under the chairship of Chris Kidd, promotes and administers the Fellowship and as part of the process carries out considerable research into the suitability of the nominees. Nominations from the membership are welcome by the Awards Committee.

Current Honorary Fellows are:

Elected 2006	Roy Lancaster, John Melmoe, Tim Smit, Ed Wolf
2007	Dennis McGlade, Anna Pavord
2009	Richard Bisgrove, Niall Kirkwood
2010	Shirley Sherwood
2011	Adil Güner
2012	John Massey, Graham Ross
2013	Piet Oudolph
2014	Peter Thoday
2015	Raymond Evison
2016	No appointment
2017	James Hitchmough, Nigel Dunnett
2018	Michael Fitt
2019	Tim O'Hare

Tim O'Hare**BSc MSc MIBSci MBIAC CSci**

by Peter Styles

The manufacture of soils for all aspects of land reclamation, amenity landscape, roof gardens is of vital importance particularly where there are restrictions on the use of imported natural soils. Tim O'Hare has been a pioneer in the creation of soils using recycled and waste products for other industries and has been recognised by the Kew Guild for his outstanding contribution to the environment.



Tim has been a professional soil scientist since 1993. After finishing his Masters in Soil Science at Reading University he joined the independent environmental consultancy Dr Augustus Voelcker & Sons Ltd, based in West London.

Tim progressed to the position of Head of Soil Science before taking on the same role in a newly formed environmental consultancy, Mayer Environmental. Tim co-founded Soil & Land Consultants Ltd in 2001 with George Longmuir, and after a successful partnership, formed Tim O'Hare Associates in 2006.

Tim sits on the British Standards Institute working group *Topsoil and other Growing Media (AW20)* and has been involved with the 2007 and 2015 updates to the *British Standard for Topsoil (BS3882)* and the preparation of the first *British Standard for Subsoil (BS8601:2013)*. He was also joint author for DEFRA's *Code of Practice for the Sustainable Use and Management of Soils on Construction Sites*. Tim has been council member of the Institute of Professional Soil Scientists, and supports several other working groups including the Sports and Play Construction Association (SAPCA). He has written numerous papers and articles for journals and trade publications on topsoil quality, soil specification, tree pit design, soil analysis methodology, contaminated land remediation and compost science. Tim has undertaken a wide variety of consulting and project management assignments and he has been instrumental in the successful delivery of some of the most iconic and influential landscape projects in the UK and abroad including Queen Elizabeth Olympic Park London, The Garden Bridge, Battersea Power Station, Jubilee Gardens, Eastside City Park, Terminal 5 Heathrow, A3 Hindhead by-pass, Ascot Racecourse, British Sugar Topsoil, The Palm Dubai, Education City Qatar, Westergasfabriek Amsterdam, Bay East, Singapore, Mezzyad Desert Park Abu Dhabi and Duncan Terrace.

He has also during this period sought to enhance the knowledge of landscape professionals about soils and the crucial role they play in the success of landscape projects, and for the wider environment. He regularly delivers talks and workshops across the country and, in 2016, instigated an industry soils conference, SoilsCon, which takes place again every year. Many professional horticulturist and landscape architects have benefited from Tim's advice.

News of Honorary Fellows

Dennis C. McGlade (FASLA)



I am mostly retired from OLIN, the landscape architecture practice in Philadelphia PA, USA, with which I was a partner for 30 plus years. I still keep active in the horticultural community, however. I am one of many judges for the spring flower show of the Pennsylvania Horticultural Society. I am on two advisory committees (horticulture and master planning) of the Morris Arboretum of the University of Pennsylvania, in Philadelphia, as well as being on the landscape committee for the grounds of my condominium.

I am also on a gardening committee that oversees the plantings of Washington Square in Philadelphia. We advise the National Park Service on this square because they manage it as part of Independence National Historical Park. This park contains Independence Hall and the Liberty Bell. Additionally, I am part of a larger team of 30 plus volunteers who actually do gardening in the park – mulching, weeding, thinning, pruning, and planting shrubs, bulbs, perennials, and annuals.

I continue in my tradition of many years of travelling to London every May for the Kew Guild dinner and to visit with Allan and Joan Hart. We usually do a week tour of gardens around the UK as part of this visit. These tours are both very enjoyable and educational. I also have a hobby of photographing gardens and plants with my iPhone. I post my photos regularly on Instagram.

Richard Bisgrove

My year began, as usual, with a crash course in garden history for the second-year Kew Diploma students: 18 hours of PowerPoint slides in three days plus a couple of visits, and it ended with a similar course over four days for Garden Design and Horticulture students at Cornwall College on the Eden Project site near St Austell. In between came my Amenity Horticulture lectures – another 18 hours – to final year Kew students. The students all survived remarkably well and in Kew at least I was fed a continuous supply of coffee and cakes so I survived too.

I am still involved, though less often, with my two ongoing gardens near Leatherhead (150+ hectares) and Chiswick (circa 0.1 hectares) on a professional basis but my son's family now have a house and garden in West Dulwich and my nephew's family have moved into a house with 1.5 hectares of garden so I manage to interfere there too. Reviews of my latest – and last – book, *Gardening across the Pond*, published last September here and in November in the USA, have been very favourable but sales have not matched the praise so I will not be retiring on the proceeds any time soon.

On the home front we have been away from home more often than usual: Northern Cyprus for an amazingly cheap holiday in February, North Carolina and Colorado in June (lectures and catching up with old friends), Dusseldorf (Reading's twin city in Germany) in September for a joint choir concert and Peru (pure holiday!) in October. All these around five weeks of summer school lectures in Oxford for various American groups. Next year starts with our 50th wedding anniversary on 3rd January before Kew in February to start the annual round.



Compost spreading in the Bisgrove garden

Peter Thoday

Last year I mentioned my involvement with wild flowers. Since then the value of wild flowers in conservation has become a frequent topic across the media. In 2019 my life long role as a cultivator has led me to look into the long-term management of species rich swards. The re-establishment of permanent pasture with diverse forbs has often been very successful. My interest is in two areas with rather different challenges and poorer results, arable field margins and road verges. Apart from both being long and narrow and costing rather than earning money they are both significant features in our much cherished British landscape. The challenge is to broaden their amenity value to as much wildlife as possible, either by supplying food or a home. Both sites are products of human activity and neither can be isolated from what goes on around them.

Nature over-steps its welcome and human requirements imposed if traffic is obscured or ragwort spread. The cultivator's role in establishing a diverse flora requires such familiar tasks as seedbed preparation and sowing but thereafter site management rests solely on the use of some form of mower. My particular interest is in how varying time, frequency, and height of cut can optimise such sites' value to nature and favour selected species while staying within the constraints imposed by societies' demands. For many years I have enjoyed working with landscape architects to achieve successful plantings. I find it as rewarding to join with ecologists to combine our complimentary knowledge and skills to again achieve the desired flora. © Peter Thoday

Raymond Evison



Clematis Expo

My year has been full of travel and with many visits to China on business and to attend the Beijing Expo 2019, space only allows for a glimpse of what I was able to enjoy. It was a great honour to be asked by The Beijing Florascape Co. Ltd. to design a clematis garden for the very large Beijing Expo 2019. During 2018 I was asked to design a 280 square metre clematis garden for the Expo and it was decided that the garden would be used to educate visitors to the Expo

how clematis could be used in a garden setting, showing their uses with host plants, growing in containers and in a typical English garden setting. The garden was planted during April 2019 and performed well despite the early Summer high temperatures, and the clematis were still flowering into the Autumn when the Expo closed. This gave me the chance to go into the mountains (my greatest love) to see plants in their native habitat, north of Beijing on the borders with Hebei and Beijing we saw a great range of genera and on the way up to the peak at 1700 metres we found *C. siberica* var *ochotensis* and at the summit (Chengde/Fengning) *C. macropetala* var *macropetala* was flowering. As might be expected there were many inter-species hybrids between these two similar species. Other visits were to Yunnan in the Lijiang area, where in one valley alone I found eight different clematis species in a just a few hours, really exciting stuff!

The George Brown Memorial Award

For furthering communication and diplomacy in the true spirit of the Kew Guild



Marcella Corcoran

Marcella started working life in an office doing pay accounting. After 10 years she travelled for a year and during that time decided that the great outdoors was where she really wanted to be and focusing on working with plants was her first choice. She started her career with plants as a grounds person and went to night school for several years until she was more than fully qualified in horticulture. A chance to experience work at Royal Botanic Gardens Kew (RBG) evolved into doing the Kew Diploma in Horticulture and subsequently a permanent member of staff at Kew.

Marcella worked in the gardens for a few years before moving into the Herbarium at Kew in 2007 to work with the UK overseas territories team. Her time was divided between nursery work, fieldwork on islands, and desk work. Her current role is with the RBG Kew Science Directorate in the UK and Islands Conservation team, this year focusing on threatened plants from Madagascar. Most of the work in these roles has been to assist and train partners in nursery and propagation skills for the development of ex-situ conservation collections of threatened plants and to develop protocols for cultivation and germination of native plants on islands. Developing good relationships with the partners has helped them work together closely and she continues to correspond from her desk at Kew when queries crop up and provides technical support when needed. Another award, which Marcella has recently been awarded (in 2018), is the John Spedan Lewis Medal by The Linnean Society.

Kew News: 2019

‘Kew And You’ is the weekly newsletter produced by and for Kew’s volunteers and also available for staff. Volunteer Editor Amanda Le Poer-Trench has kindly agreed to allow the Guild to publish excerpts, which will undoubtedly be of great interest to Kewites around the world. All copyright belongs to RBG Kew. Once again précised by Richard Ward.

January

Kew Magazine has recently changed to using a biodegradable potato starch wrapper.

Recipients will now receive the following message along with their magazine. *You may have noticed that this issue of Kew magazine was delivered to you in a 100 per cent compostable wrap. Make sure you dispose of the wrap in your food waste bin or on your compost heap. It should start to degrade within just a few weeks.* This simple change will have a big impact as Kew Magazine is sent out three times a year to thousands of Kew Friends. In addition, copies of Kew magazine are available to buy in any of Kew's shops.

Wakehurst Winter Garden opened. Wakehurst's new horticultural spectacle was officially launched on Wednesday. Despite the weather being overcast and biting cold over one hundred guests including stakeholders, media, volunteers and staff attended. Designed by Wakehurst Garden Supervisor Francis Annette, the garden was opened by Nick Bailey, horticulturist, garden writer and presenter on BBC Gardeners' World, who planted a *Hamamelis x intermedia* 'Pallida' (witch hazel) to celebrate the opening and spoke about the importance of innovative garden design in attracting new audiences. Tony Sweeney and Ed Ikin also spoke at the launch.

Wakehurst has been recognised in the prestigious Horticulture Week Custodian Awards. The annual event celebrates the best part of parks, gardens and tree management in the UK. Wakehurst was very highly commended in the 'Best Planting Design' category for our new Winter Garden. Francis Annette, along with horticulture colleagues Eliana Van Der Schraft and Harriet Fermor, travelled to Woburn Abbey, Bedfordshire, to take part in the ceremony held in the Sculpture Gallery at the end of June. It was a wonderful accolade. I want to thank the whole team of horticultural staff and volunteers involved in every aspect of creating this wonderful garden. – Tony Sweeney (Director of Wakehurst)

February

Building Connections and Breaking Down Barriers - KLF Annual Conference. The Kew Leadership Forum (KLF) got together offsite last week for their annual conference. It was a full day with an opportunity for discussion, networking and making connections, which can only help to break down barriers and enable cross-directorate working. The KLF is made up of Executive Directors, their direct reports and a handful of other managers who have cross-organisational roles. All these senior managers are leaders right across RBG Kew and not just the area they work in. Very few of us can deliver without working with other directorates and departments, and the KLF, if working properly, will help with engagement and delivery. I would like to thank all the presenters and Sarah Donnelly, Linda Graves and the Learning and Development team from HR for organising the conference. Feedback from KLF has been positive and, whilst it meant that people had to take a day out of busy work schedules it was felt to be an important and worthwhile day. - Richard Deverell

March

Reaching Young People: Art and Science in the Temperate House. A new youth outreach project at Kew has been connecting groups of young people to our collections and scientific work using photography. *Photography workshops.* Our youth outreach projects target groups who work with young people who face significant barriers to accessing Kew. Designed by a professional photographer in collaboration with our Youth Forum, our photography workshops aimed to engage diverse groups of young people with the rare and endangered plants of the Temperate House. The 40+ participants in the project included young people living with mental illness, young people in pupil referral units and at risk of homelessness, and young people with special educational needs who are deaf and/or have speech, language and communication needs. Many of those who took part

had never visited or even heard of Kew Gardens before. These young people created a range of stunning images, celebrating the beauty and diversity of the collection. After taking part in the workshops the young people felt that they knew more about plants and Kew's work, more confident to learn about plants and wanted to visit Kew again to learn more. The project gave us the opportunity to help young people form personal connections to the natural world, developing scientific skills through close observation and encouraging them to ask questions and explore. Combining artistic practice and scientific learning allowed us to make Kew accessible to new audiences of young people. *Next steps.* We will be showcasing the amazing work produced digitally and on site. Watch out for a chance to view a selection of the work, chosen by the Youth Forum and the photographer for exhibition, and for a new photography learning card that families will use in the Gardens. Following the massive success of this project we look forward to running more outreach opportunities for young people at Kew.

International Women's Day: trail blazing women of Kew. As part of its coverage for International Women's Day the BBC has published an article about the first women gardeners at Kew, while a new animation celebrating Marianne North and her botanical art is now online. The BBC article reveals that the first women gardeners in 1896 were employed on equal pay and, for a while, wore the same uniform as the male gardeners, including bloomers. The article includes quotes from Kew archivist Kiri Ross-Jones and Eli Biondi, POWC supervisor. Read the full article on the BBC website.

Sir Paul Nurse to join RBG Kew Board. I am delighted to announce that Sir Paul Nurse will be joining the Board of Trustees of RBG Kew from October as an Independent Member. Pre-eminent life scientist Paul is currently the Director of the Francis Crick Institute in London and previously was President of the Royal Society and President of the Rockefeller University, New York. In 2001 he was awarded the Nobel Prize in Physiology for his discoveries relating to the control of eukaryotic cell division. In my opinion he is the pre-eminent life scientist currently working in the UK. Paul originally studied biology (including mycology) at Birmingham University which included a stint at Kew, in the Jodrell Laboratory, as a sandwich student. I am absolutely thrilled that someone of his calibre has agreed to join Kew's Board and I believe it is a great vote of confidence in Kew and particularly our science. – *Richard Deverell*

April

Climate justice: awarding the KIM to Mary Robinson. Last Tuesday evening I had the great privilege to award the Kew International Medal to Mary Robinson, a long-standing champion of climate justice and founder of the Mary Robinson Foundation, in front of a packed audience of scientists, environmental activists, MPs, and diplomats from many nations. We awarded Mary for the work she does on climate justice: the notion that opportunities for the world's poor and most vulnerable, who have contributed least to the causes of climate change, are the most affected by its impact. Severe weather events force people from their homes, put pressure on strained resources and inflame regional fragility. Mary's work is closely aligned with Kew's mission and values. It demonstrates how dependent humanity is on the ecosystems that surround us, and the impact of the increased threat to their existence. Like Kew, she is committed to meeting the UN Sustainable Development Goals on biodiversity, agriculture and food security. She believes in supporting the next generation of scientists and climate activists and is working alongside them to demand that we make better use of our planet's most precious resources. I share her belief that science, politics and everyday lives are interconnected and I am delighted we could honour her by presenting her with this year's Kew International Medal – the 12th we have awarded. – *Richard Deverell*

Chihuly: Reflections on Nature. The exhibition officially opened to the public last Saturday, following a successful press launch last week. The exhibition features 32 separate installations, most of which have never been on display in the UK before, in 13 locations around the Gardens, including glasshouses, vistas and galleries. As well as Summer Sun by the Palm House and the Sapphire Star by the Temple of Bellona, the Temperate House features Persians and Opal and Amber Towers all specially commissioned for the exhibition. Other installations include the Ethereal White Persian Pond in the Waterlily House, Niijima Floats by the Japanese Gateway and glassworks and drawings in the Shirley Sherwood Gallery, including Baskets, Seaforms and Rotolo, heavy coils of glass fused to a solid base.

May

Fern Stoner - Director of Resources. The good news is we achieved a substantial surplus of £2 million in the last financial year. We don't plan for a surplus or anticipate achieving one every year but the additional money is really valuable to us. This is a tremendous achievement – particularly given that our funding from Defra fell by £1.2 million – and reflects the efforts of everyone at Kew and Wakehurst over the past year and our continuing financial health. Our budget for 2019-20 includes equally ambitious targets for self-generated income and further investment and expenditure to support this growth, as well as a contingency should everything not go to plan. It is also the final year of our four-year funding settlement with Defra and this operating funding from government will fall by a further £1.3 million this year. My thanks to everyone across Kew as we all contribute to Kew's financial success.

Pavilion Bar and Grill opens today. The Pavilion Bar and Grill at Kew Gardens opens its doors to the public for the first time today, 13th May, after twelve months of construction. Situated near the magnificent Temperate House and the Great Pagoda, the impressive and contemporary restaurant building boasts expansive views of the surrounding Gardens all year round. Pavilion Bar and Grill will be open all year around and staff/volunteer discount will apply.

Kew's Children's Garden. Our long-anticipated - and very fabulous - Children's Garden, designed for kids aged 2 to 12 years old, opened to the public on Saturday 18th May. Following a series of preview days and a slot on Blue Peter, the press launch took place last week, with a visit from Defra Minister Lord Gardiner and some invited young guests in the afternoon. Those attending the preview days gave the Garden rave reviews.

Time slots. It really was difficult to get people to leave the previews, so we're introducing time slots to make sure we don't exceed the capacity of the Garden and ensure a quality visit for everyone. Visitors (including staff and their children) arriving at the Children's Garden will be allocated a time for a 90-minute session. Time slots will be allocated on a first come, first served basis, and in busy periods some visitors may have to return later in the day for their slot. Arrive early to avoid disappointment and remember all adult visitors must be accompanied by a child. *About the Children's Garden.* Based in a natural setting the size of nearly 40 tennis courts, children will be able to explore all the things plants need to grow: earth, air, sun and water. Over 100 mature trees are spread over this beautiful landscape, with hidden treasures and adventures around every corner, leading to a 4-metre-high canopy walk wrapped around a 200-year-old Oak in the heart of the Children's Garden.

Youth Explainers. After graduating last month, they have started volunteering each Saturday in the Temperate House and are doing a great job of enhancing visitors' enjoyment and understanding of plant science. Using their engagement games, they are helping visitors of all ages learn about the amazing stories of temperate plants from around the world. This month was also the start of our Youth Forum project which will see the young people develop a creative activity for the 2019 Science Festival. The project is led by poet Katherine McMahon and during this session, the group of 29 young people enjoyed exploring the Temperate House and writing creative responses to the experience.

June

Sun & Science at the Millennium Seedbank. *Alexandre Antonelli – Director of Science.* In total, we met over 3,500 inquisitive individuals and families over the bank holiday weekend. I think it's crucial that scientists engage broadly with citizens and this is one of our great opportunities to do just that. It was great fun to explore the festival and see many of you on your stands, from measuring trees to creating botanical art, then on to making liquid nitrogen ice cream (surprisingly yummy!) and extracting DNA. The visitor feedback is full of praise for the hard work of everyone in yellow Kew t-shirts, for leading inspiring activities, interacting with children brilliantly, and explaining things with great enthusiasm. I dropped in to the science cafe for a chat about life as the Director of Science, and to try to convince the visitors that Cinchona trees should be protected – and so too the future of quinine, anti-malarial drugs and the classic G&T – but of course I had no chance against Yew, the wood of which was used for building wands in Harry Potter! The scientists on stage had some great interactions with the audience, with lots of interesting questions and audience participation. *A huge thank you.* I want to take this opportunity to thank everyone who contributed to the Kew Science Festival at Wakehurst. I know it took a ton of work before, during and after the festival – all your efforts were outstanding and hugely appreciated. None of this would have been possible without the efforts of the core festival team: Mimi, Louise, Kate, Keith, Richard, Joey and Alice. A particular thanks to you guys! They're now back at work planning the Kew Gardens event in July, when I hope many more of you will get involved.

North American prairie-style landscape coming soon to Wakehurst. The Horticulture team at Wakehurst is about to start work on the creation of a six-acre landscape inspired by the sweeping prairies and grasslands of North America. These exciting changes will unfold as you walk down from the Mansion. True to our intrepid ethos, Wakehurst will use ecological principles to translate wild US plant communities into designed landscapes, using layers of sowing and live plants. A proportion of live plants will be raised from wild-collected seed, to be gathered on a joint Wakehurst Horticulture and Kew Science US collecting trip this September. The project will restore Wakehurst's historic landscape, revealing stunning views through to the Water Gardens and across Coronation Meadow that haven't been seen since the 1930s. Ed Ikin, Head of Landscapes and Horticulture, who's leading the project, said: 'The landscape will be transformed into a magical sea of delicate movement and beauty underpinned with swaying Little Bluestem grass and studded with richly coloured Echinacea, Blazing Star, Butterfly Weed and Bergamot. The Camassia Meadow will be a carpet of rich purple in late spring. Explorer paths cut through the planting will make sure our visitors feel fully immersed in this beautiful area.'

Plant Power: Bioenergy as a Renewable Resource. *New analysis of plant extinction published.* Kew Science, working with Stockholm University, has compiled a global analysis of all plant extinction records documented from across the world. Published recently in leading journal *Nature, Ecology & Evolution* the study has already attracted widespread media coverage. It brings together data from fieldwork, literature and

herbarium specimens, to show how many plant species have gone extinct in the last 250 years, what they are, where they have disappeared from, and what lessons we can learn to stop future extinction. The study, co-authored by Kew's Rafaël Govaerts, Eimear Nic Lughadha and Maria Vorontsova with Aelys Humphreys found that 571 plants have completely disappeared from the wild, more than twice the number of birds, mammals and amphibians combined – 217 species – and that plant extinction is occurring much faster (up to 500 times) than 'natural' rates of extinction. The highest rates of plant extinction occur on islands, in the tropics and in areas with a Mediterranean climate – typical biodiverse regions which are home to many unique species vulnerable to human activities. Extinct species include the Chile sandalwood, *Santalum fernandezianum*, and the St Helena olive while the Chilean crocus was rediscovered in 2001 after years of searching.

New Chair of Board of Trustees. Defra Ministers have just announced the appointment of our new Chair: I am delighted that Dame Amelia Fawcett DBE CVO will succeed Marcus Agius in October. I very much look forward to working with her. She is a talented and highly experienced Chair who will join us at a time when our work to help meet global challenges has never been more urgent and I would like to welcome her warmly to the Board on behalf of us all. Dame Amelia's appointment will run from 26 October 2019 to 25 October 2022. I am grateful to Marcus for his leadership over the past 10 years. I'm confident that as he hands over to Amelia, we will continue to go from strength to strength.
- Richard Deverell

July

Building a new Collections Management System for Kew. Last year, we published the ten-year Science Collections Strategy. It highlighted the need for an integrated science collections management system (ICMS) to replace our aging and disparate databases. Kew's Living Collection and Library, Art and Archives Collections share the same need. Our proposal for an ICMS aims to rationalise existing collections management at Kew. A new integrated system will reduce the number of separate systems that need to be maintained and serviced by IT and reduce the risk of systems failing. In this first stage of the programme, the team, led by John Adcock, will: produce a business case; validate our requirements, extending them to include horticulture and the art collections; consider available technical approaches, and recommend the most appropriate technical solution. Improvements to our collections management systems will be of great help to Kew's scientists, and will underpin our efforts to digitise specimens. We'll keep everyone at Kew, in Science and beyond, updated on our progress. – Alan Paton (*Head of Science Collections*)

The Prince of Wales's visit to Wakehurst. His Royal Highness The Prince of Wales visited the Millennium Seed Bank (MSB) and the gardens at Wakehurst last week to see the value and progress of work at the seed bank, almost 20 years after he opened the building. When the seed bank opened in November 2000, the aspiration was to bank 10% of the world's wild seeds by 2010. Today, it represents the largest wild seed conservation project in the world, with 2.25 billion seeds from 190 countries stored. His Royal Highness toured the *Surviving or Thriving* exhibition before visiting the underground seed vault where he learnt more about the processes involved in freezing seeds and the Crop Wild Relatives project. He also visited the nursery and propagation area, where Ed Ikin, Head of Landscape and Horticulture at Wakehurst, explained how Kew's science and the horticulture teams work together to propagate species for the future. Local school children who were in the Children's Heritage Garden at the time, were excited to see His Royal Highness as they took part in a lesson organised by Wakehurst's Schools Programme.

The visit ended at Wakehurst's stunning Coronation Meadow, which was created in response to a request by His Royal Highness for wild meadows to be planted in celebration of the 60th anniversary of The Queen's Coronation. His Royal Highness was presented with a gift of *Widdringtonia whytei*, a tree is also known as the *Mulanje* cedar or *Mulanje* cypress. It is native to Malawi and has become endangered as a result of over-harvesting and an increase of wildfires. Tony Sweeney said: 'It was a great honour and pleasure to welcome His Royal Highness to the Millennium Seed Bank and Wakehurst today. We were extremely proud to show some of the amazing work being achieved by science and horticulture teams whose work in the laboratories and nurseries is being translated into the botanic gardens and woodlands around us. This is something we hope everyone can enjoy for years to come.'

New Environment Act announced at Kew. The Secretary of State for the Environment – Michael Gove gave a speech at Kew Gardens on Tuesday 16th July on the urgent need to tackle climate change and his proposals for a new Environment Act to match the success of the Climate Change Act of 2008. The proposed act would create an Office of Environment Protection with powers to take legal action on environmental issues, including reducing carbon emissions. The Secretary of State also proposed a deposit return recycling scheme for all bottles to provide an incentive to recycle. Similar schemes in Europe have increased recycling rates. The speech was introduced by outgoing chairman of our Board of Trustees Marcus Agius, who spoke about how our scientists and horticulturists are uniquely placed to share their knowledge, both in the UK and around the globe, through partnerships in over 100 countries. He confirmed Kew's support for government to deliver domestic and international environmental policy like the Environment Act, the 25 Year Environment Plan and the UN's Sustainable Development Goals. Naturalist and TV presenter Steve Backshall also spoke passionately at the morning event, setting out his hope that the Bill will set long-term objectives for nature, enshrine our environmental principles in law, and that we will take their governance seriously, and that principles and targets must be legally binding and help to address pressing environmental issues.

August

Collaboration secures funding for Grow Wild seed distribution. From this month, Jo Malone London (JML) will be supporting the Grow Wild native flowers seed distribution in the UK for 2019-20, sending out over 20,000 seed packets to targeted audiences. This collaboration between Marketing and Commercial Enterprise (MCE), Foundation and Grow Wild has led to our second corporate sponsorship for a Kew project this year. The sponsorship is the culmination of over five years of engagement with JML by Sandra Botterell and MCE colleagues. Earlier this spring, we came together with JML senior UK staff to hear an engaging presentation from Philip Turvil about the hugely successful Grow Wild programme. This fuelled JML's interest in supporting the programme and led to a period of negotiations between Kew and JML – not without its ups and downs on both sides. With a lot of hard work and some compromises from all, we are really delighted to have secured significant funding for this fundamental Grow Wild engagement programme reaching out across the UK for the next 18 months.

Kew Foundation has secured a \$3.25 million-dollar five-year grant for the work of the Millennium Seed Bank Partnership from Arcadia, a charitable fund of Lisbet Rausing and Peter Baldwin. The programme will allow us to undertake work to support and develop partner seed banks to safeguard rare and threatened species, particularly those which are endemic, in the biodiverse regions of Indonesia, Thailand, Mozambique, South Africa and the Caucasus (Armenia, Georgia and Azerbaijan), where we will be able to

conserve up to 5,055 species. Each region faces different challenges with differing levels of existing conservation capacity. We will work closely with in-country partner organisations to ensure that each has a highly focussed seed conservation facility working to international standards and able to support a variety of plant conservation and research initiatives. We will provide training and support the upgrade of essential seed banking infrastructure where necessary. Congratulations to the project team Colin Clubbe (overall project management), Tim Pearce (South Africa and Mozambique), Kate Hardwick (Indonesia and Thailand), Aisyah Faruk and Elinor Breman (the Caucasus). Thank you to Lydia Burns from Kew Foundation for the huge effort put into securing this funding, without which this work would not be possible, and which is greatly appreciated by the project team.

September

Kew International Medal. The 2019 Kew International Medal has been awarded to Professor Sandra Diaz who is a Professor of Ecology at Córdoba National University, and a senior member of the National Research Council of Argentina. She is a passionate ecologist and outstanding scientist, and her research investigates plant diversity and the impact of climate change, mirroring Kew's strategy almost exactly. She was delighted to receive the news and will accept the award at an event in early 2020 when we hope she will also give a lecture about her work.

October

Saving heather to save our wild bees. A new study by Kew Science and Royal Holloway University has discovered a natural 'bumblebee medicine' in the nectar of heather that protects against disease in bumblebees. Heather in the UK is facing rapid decline because of changes in land use: the study shows the vital importance of protecting plants such as heather to help address bee decline. The study, published in the journal *Current Biology*, found that callunene, a natural nectar chemical in *Calluna* heather, can act as a medicine to protect bumblebees from a harmful parasite. The parasite, *Crithidia bombi*, is common among wild bumblebees and can be transmitted between bumblebees on flowers or within the nest. This protective value of heather nectar could be important for European bumblebees, especially due to the abundance of heather across the British Isles and Europe. Heathlands are, however, disappearing or becoming fragmented across Europe at a worrying rate, so the benefits to bees could be dwindling. According to The Wildlife Trust, around 85% of lowland heathland in the UK has been lost over the last 150 years due to agricultural development. The research was funded by the Peter Sowerby Foundation and is part of a wider project investigating the nectar and pollen chemistry of a variety of plants in natural and agricultural environments for their nutritional and medicinal value to pollinators. Identifying and conserving key beneficial plants is essential to safeguard pollinators, including bees, against the threats of a changing environment.

Remarkable Trees' launch. Kew Publishing celebrated the publication of *Remarkable Trees* with co-authors Christina Harrison and Tony Kirkham, colleagues and friends, at an event in the Victoria Plaza shop last week. Richard Deverell gave a great speech highlighting the importance of trees to our past and future and Kew's work in this area. Tony talked about what horticulture learned from the Great Storm of 1987 which took place 32 years ago to the day. We were delighted to welcome special guest Dame Judi Dench who kindly provided a quote for the back cover. The book, written for the general public, is beautifully designed and illustrated with imagery from Kew's Library Art and Archives, Science and Economic Botany collections, and is published in partnership with Thames & Hudson. It features 63 profiles of an estimated 60,000 species of trees, with

fascinating facts on their biology, ecology, and stories of their folklore, religious and cultural significance. It is already available in German and Spanish editions and Chinese and Korean translations are in preparation – a great example of how we extend our reach and brand to audiences worldwide through publishing. Thank you to all who helped in the development and preparation of the book.

December

Stunning new book ‘Fungarium’ published. Following the success of the Botanicum series of books, Kew has once again partnered with Templar Publishing to produce Fungarium. This fantastic new book is illustrated by Botanicum artist Katie Scott and written by Kew mycologists David L. Hawksworth, Laura M. Suz, Pepijn W. Kooij, Kare Liimatainen, Tom Prescott, Lee Davies and Ester Gaya. The authors bring the wonderful world of fungi to life in this beautifully illustrated large-format book with fascinating stories from the fungi kingdom. Congratulations to all of the authors on such an amazing book. And even more exciting, the book is exclusive to Kew until summer 2020. It’s only available to buy in the Kew shops and online at shop.kew.org, and you won’t find it anywhere else (not even on Amazon).

Prestigious award for ‘A Legacy of Ancient Oaks’. Kew Publishing won its fourth award at the British Book Design & Production Awards last week with ‘A Legacy of Ancient Oaks’ by Mark Frith, in the Exhibition Catalogue category: a real honour to have such recognition from the publishing industry. There was tough competition in the category, including the Tate Van Gogh exhibition catalogue, so it’s fantastic to have such an accolade for a Kew exhibition book and to be able to celebrate Mark Frith’s work in this way. The judges said: ‘This book produced technically challenging drawings in an excellent way through engaging, clear and competent designs.’ The awards were hosted by Kew ambassador Konnie Huq, so there was an extra bit of Kew representation at the ceremony. At the Garden Media Guild Awards Kew magazine was shortlisted for cover of the year and ‘Field Guide to the Orchids of Europe and the Mediterranean’ shortlisted for practical book of the year.

Children’s Garden wins BALI Grand Award. The outstanding quality of the design, planting and construction of the Children’s Garden was celebrated at a major landscape industry event last week when our new attraction beat six other finalists to win the ‘Community and Schools Development’ category, before scooping the major Grand Award, chosen from all 14 category winners. The award was made in the presence of over 1,000 BALI members and guests. BALI is the British Association of Landscape Industries, the top body for professionals working in the field, and the Association recognised Ground Control, our design and build partners on the project, for the quality of their work during the successful completion of the garden. The details of the Grand Award were kept under strict embargo until the end of the glittering event on Friday. Congratulations to Ground Control, and to everyone who contributed to the Children’s Garden, from design through to completion. This is a very significant recognition of excellence within the landscape industry, and is a very prominent feather in Kew’s cap.

An update for the Kew Guild provided by Director Richard Deverell

Kew Guild 2019: Director's Foreword.

2019 has been another outstanding year for RBG Kew, bringing together exceptional staff and governance appointments, care for our Natural Capital and strong visitor programmes. We have again exceeded visitor number targets and achieved record numbers. All staff, partners, volunteers and supporters should congratulate themselves for what we have achieved together this year.

Exceptional people:

- *Prof Alexandre Antonelli* was appointed Director of Science, replacing Prof Kathy Willis who returned to Oxford to become Principal of St Edmund's Hall. Prof Antonelli is a Professor in Biodiversity and Systematics, previously at Harvard and Gothenburg Universities, and a specialist in the diversity of Amazonian forests.

- *Kew Head of Arboretum, Tony Kirkham* was awarded the Victoria Medal of Honour from the Royal Horticultural Society. This prestigious award is widely regarded as the highest distinction in horticulture. Tony has been with Kew over 40 years and is richly deserving of this honour. He was also awarded an MBE in the 2020 New Year's Honours list.

- *Dame Amelia Fawcett* was appointed Chairman of RBG Kew in October 2019. Dame Amelia has over 30 years' experience in the banking industry and is Chair of Kinnevik AB, Chair of the Standards Board for Alternative Investments, a Trustee of the Wellcome Trust and is the Lead Independent Director for State Street Corporation. She is owner of Chilcott & Company Ltd, a lavender farm which she founded in Wales in 2014. She has been Chairman of the Prince of Wales Foundation (US) since 2017.

- Director of the Francis Crick Institute, *Sir Paul Nurse* became an independent Member of the Board in October last year. Sir Paul is a distinguished life scientist having been awarded the Nobel Prize for his work on cell division and serving as President of the Royal Society for five years.

- *Pippa Wicks*, Deputy Chief Executive of Co-op Group, was appointed Chair of the Foundation in December. Pippa chairs AlixPartners, UK turnaround and restructuring business. Prior to joining AlixPartners, Pippa was CEO of FT Knowledge, a division of Pearson plc, Group CFO of Courtaulds Textiles plc and a senior manager with Bain & Company strategy consultants.

- Kew Staff, *Richard Moore* won the Young Horticulturalist of the Year award and *Nicky Nicolson* the Young Researchers Award for Science.

- The Kew International Medal (KIM) was awarded to *Mary Robinson*, Chair of The Elders, former President of Ireland and former United Nations High Commissioner for Human Rights. The KIM is awarded to individuals who have made a significant contribution to science and conservation and Mary Robinson was selected for her globally recognised work on Climate Justice.

Groundbreaking Science:

The Millennium Seed Bank Partnership (MSB and Data Warehouse) now holds about 16.5% of the world's bankable seeds, representing 49,491 plant species, and progressing towards the ambitious target of 25% (data at 31 Dec. 2019). A total of 803 of these plant species (808 taxa) are on the IUCN Red List of threatened plants. During the calendar year 2019, a total of 960 new species (in 4,373 collections to help build genetic diversity in the collection) were added to the MSB. Kew has moved the target to capturing more diversity in important groups of species, like crop wild relatives and UK native trees – so we have accessioned fewer new species but more collections per species, from across their ranges.

Researchers from Queen Mary University of London and Kew sequenced the DNA from

circa 1,250 ash trees to find inherited genes associated with ash dieback resistance. The genes important for resistance have been identified, and it is now possible to predict which trees will survive ash dieback. This will help identify susceptible trees that need to be removed and provide the foundations for breeding more resistant trees. Kew was awarded a £2.5 million grant from the British Council for the 'Underutilised Plants and Fungi of Colombia'. Since the Peace Agreement, RBG Kew has undertaken many projects in collaboration with our Colombian partners to identify, protect and promote plant and fungal diversity in Colombia. This work has been part of the Colombia Bio programme, jointly funded by the British Government and the Colombian Government. Kew scientists have also helped set up a seed bank for the Boyacá region of Colombia and are helping with work on a comprehensive database to record Colombia's useful plants under the ColPlantA project.

In August Kew was awarded a £2.6 million grant from Arcadia Fund for the threatened Biodiversity hotspots programme to safeguard rare and threatened species. With one in five plant species threatened with extinction, identifying and protecting important species for the future is crucial. The Millennium Seed Bank Partnership is the largest ex situ plant conservation programme in the world and works with a partner network in over 100 countries. Approximately 102 vascular plants and eight species of fungi were discovered in 2019 across the world from Africa, Asia, the Americas and beyond. Many are already under threat of extinction. A bamboo-dwelling, medicinal fungi, a snowdrop discovered on Facebook and a miracle berry that changes your taste buds, are among this year's most interesting finds.

Inspiring Collections:

The Living Collections Strategy, published in July, provides a blueprint for stronger alignment and integration of Kew's horticulture, science and conservation. Our vision is for the collections is to be taxonomically, geographically and genetically diverse, useful for science and conservation and for showcasing the wonder of plants. We are confident we have the most diverse living collections in the world comprising: 68,000 accessions, 27,000 different taxa, 19,000 different species.

The 2019 Orchid Festival in February focused on Colombia, home to circa 4,200 Orchid species and a country pushing forward its conservation agenda. We featured 10,000 plants, including 6,200 orchids, to create displays representing the vibrant culture and wildlife of Colombia. Visitor attendance was 28% up on 2018. The Winter garden was open in January at Wakehurst, and exhibitions 'Celebrating our Oaks' and 'Surviving or Thriving' contributed to strong visitor numbers for 2019. The Science Festival took place in the summer. The new Children's Garden opened in May. Covering three acres, the garden is designed around the elements that plants need to grow: earth, air, sun and water. It aims to develop children's love of nature, plants and the outdoors and has proved extremely popular with over 320,000 visitors in its first six months. It was funded entirely through private philanthropy. The Agius Evolution Garden opened in July, thanks to a donation from the outgoing Chairman, Marcus Agius. The Garden tells the story of the evolution of plant life on earth over the past 500 million years, a story revealed through DNA analysis, much of which was undertaken at Kew. This Garden is the latest example of our ambition to put more science and conservation into the visitors' experience.

We have achieved record visitor numbers at Kew Gardens in 2019. Our forecast for the full year, 2019/20 is circa 2.2 million visitors, a rise of 20% on the previous year (which was also a record year). By contrast, in 2012/13 we had 1 million visitors. In August 2019, Kew Gardens had 260k visitors; we believe this is the busiest single month at Kew since 1916, the year entrance charges were introduced. The glass sculptures of Seattle based

artist, Dale Chihuly, were brought to Kew for the summer from April to October in an exhibition entitled Chihuly: Reflections on Nature. 32 art installations were situated across the Gardens for this very successful exhibition enjoyed by thousands of our summer visitors. There was also a successful 'Lates' programme with evening events, music and food. The year ended with another spectacular Christmas display of lights and installations at our Christmas @ Kew festive trail, which this year included a popular waterfall of lights from the treetop walkway. This year Kew opened for even more evenings allowing more people to enjoy the gardens in the winter months. Wakehurst's 'Glow Wild' displays also achieved a record-breaking run.

2019 has been a strong year for us as we consolidate the progress made so far and look towards increasing our reach and impact in the future. We look forward to 2020 and continuing our successful commercial and visitor programmes which raise funds for our critical Science projects. We will continue to care for all our Collections enabling our visitors and researchers to both learn from and enjoy them, and we will engage with the challenges of the Climate Agenda by putting Kew's unique skills and resources forward at this critical time for our planet.



Agius Evolution Garden ©RBG Kew

Tony Kirkham ©RBG Kew



Dame Amelia Fawcett ©RBG Kew



Alex Antonelli ©RBG Kew

Chihuly ©RBG Kew



The Year at Wakehurst 2019

by Ed Ikin

After the punishing drought of 2018, our first hope for the new year was better growing conditions to nurture our plant collection and the climate favoured us for the first half of the year. Wakehurst was busy with new horticulture, exhibitions, events and heightened commercial activity, a most rewarding year.



The first highlight of the year was the launch of our new Winter Garden. Designed by Gardens Supervisor Francis Annette and featuring 33,000 plants, beautifully executed hard landscaping and an exquisite sinuous bench, we felt proud of our efforts, it was now time to share it with our visitors. The launch was a great success. On a freezing January day, garden luminaries such as Gardener's World's Nick Bailey, Robin Lane-Fox and our very own Director of Horticulture Richard Barley gathered around glowing firebowls to celebrate good horticulture. Press coverage was excellent, with features on BBC Breakfast, The English Garden, House & Garden and The Financial Times.

The atrium of the Millennium Seed Bank is a public space, designed to share Kew Science's work with our visitors. Just a month after the Winter Garden opened, we launched our new exhibition *Surviving or Thriving?* Bringing the most compelling stories from Kew's State of the World's Plants report to life, the exhibition highlights the very significant threats undermining global biodiversity. It's been a great way to communicate our science work with a wider audience, with very positive comments from our visitors.

The summer saw ground being broken on our most ambitious horticultural project for years, the American Prairie. Developed in collaboration with US ecologist and landscape designer Larry Weaner, we're going to establish three US plant communities over six acres using wild collected seed gathered through our US conservation partnerships. We're using an ecological establishment process, direct sowing a pioneer US plant community then mowing it to encourage rooting. Once stable, live plants will be added to speed up the succession process with the eventual composition of the prairie including over 100 species of grass and flowering plant. Establishing a novel plant community has required a complete clearance of the site, which has prompted plenty of questions from our visitors, which we've answered through extensive interpretation in a plant-hunter's tent beside the project. Once mature, we'll manage the prairie as our US counterparts do, burning in late winter and grazing in the summer.

Glow Wild repeated the success of previous years, selling over 60,000 tickets and delivering night after night of happy customers enjoying the trail and delicious food from the Carriage Ring. Glow Wild has gone from a four night event at launch to one that now spans two months, a central feature in many of visitors' pre-Christmas plans. It's a vital part of our business, generating a significant profit to support our conservation and learning work. Glow Wild has attracted new audiences to Wakehurst and has been a significant contributor to our growing membership, which now stands at 17,500.

2020 will bring the transformation of the American Prairie and the start of a new research programme exploring the value of our landscape – how it stores carbon, provides pollinators, filters water and improves wellbeing, there's much to look forward to.

Wakehurst Place Weather 2019

Wakehurst Place Weather:	January 2019	Wakehurst Place Weather:	February 2019
Month's total rainfall:	35.2 mm	Month's total rainfall:	58.2 mm
Rainiest day:	8.9 mm on 21 & 29 th	Rainiest day:	14.2 mm on 8 th
Rainless days:	15	Rainless days:	9
Highest Max Temp:	12.1 °C on 13 th	Highest Max Temp:	23.1 °C on 25 th
Lowest Max Temp:	3.6 °C on 23 rd	Lowest Max Temp:	2.7 °C on 1 st
Highest Min Temp:	7.7 °C on 13 th	Highest Min Temp:	7.9 °C on 18 th
Lowest Min Temp:	-2.6 °C on 31 st	Lowest Min Temp:	-2.2 °C on 3 rd
Nights with air temp below freezing (0.0 °C and below):	9	Nights with air temp below freezing (0.0 °C and below):	2
Windiest day date: 27 th Direction: NW Wind speed: 25 MPH		Windiest day date: 9 th Direction: S.W. Wind speed: 27 MPH	
Wakehurst Place Weather:	March 2019	Wakehurst Place Weather:	April 2019
Month's total rainfall:	87.4 mm	Month's total rainfall:	14.8 mm
Rainiest day combined:	28.4 mm 1-3 rd	Rainiest day:	4 mm on 3 rd
Rainless days:	13	Rainless days:	15
Highest Max Temp:	20.6 °C on 29 th	Highest Max Temp:	28.2 °C on 21 st
Lowest Max Temp:	8.6 °C on 12 th	Lowest Max Temp:	8.5 °C on 9 th
Highest Min Temp:	9.3 °C on 3 rd	Highest Min Temp:	13.8 °C on 22 nd
Lowest Min Temp:	2.4 °C on 26 th	Lowest Min Temp:	-2.4 °C on 11 th
Nights with air temp below freezing (0.0 °C and below):	0	Nights with air temp below freezing (0.0 °C and below):	3
Windiest day date: 15/17 th Direction: W/W.N.W. Wind speed: 30 MPH		Windiest day date: 28 th Direction: N.W. Wind speed: 28 MPH	
Wakehurst Place Weather:	May 2019	Wakehurst Place Weather:	June 2019
Month's total rainfall:	31.7 mm	Month's total rainfall:	123.5 mm
Rainiest day combined:	15.9 mm on 7+8 th	Rainiest day:	36.4 mm on 10 th
Rainless days:	16	Rainless days:	13
Highest Max Temp:	24.3 °C on 23 rd	Highest Max Temp:	34.4 °C on 29 th
Lowest Max Temp:	12.2 °C on 4 th	Lowest Max Temp:	14.4 °C on 10 th
Highest Min Temp:	14.1 °C on 25 th	Highest Min Temp:	19.2 °C on 24 th
Lowest Min Temp:	1.7 °C on 5 th	Lowest Min Temp:	8.2 °C on 9 th
Nights with air temp below freezing (0.0 °C and below):	0	Nights with air temp below freezing (0.0 °C and below):	0
Windiest day date: 5 th Direction: N. Wind speed: 24 MPH		Windiest day date: 24 th Direction: S Wind speed: 26 MPH	
Wakehurst Place Weather:	July 2019	Wakehurst Place Weather:	August 2019
Month's total rainfall:	61.1 mm	Month's total rainfall:	54.7 mm
Rainiest day:	32.5 mm on 19 th	Rainiest day:	11.8 mm on 12 th
Rainless days:	19	Rainless days:	13
Highest Max Temp:	36.7 °C on 25 th	Highest Max Temp:	35.2 °C on 27 th
Lowest Max Temp:	18.9 °C on 19 th	Lowest Max Temp:	18 °C on 16 th
Highest Min Temp:	19.7 °C on 24 th	Highest Min Temp:	18.0 °C on 9 th
Lowest Min Temp:	°C on	Lowest Min Temp:	9.7 °C on 13 th
Nights with air temp below freezing (0.0 °C and below):	0	Nights with air temp below freezing (0.0 °C and below):	0
Windiest day date: 31 st Direction: S.W. Wind speed: 25 MPH		Windiest day date: 11 th Direction: W.S.W. Wind speed: 27 MPH	
Wakehurst Place Weather:	September 2019	Wakehurst Place Weather:	October 2019
Month's total rainfall:	105.1 mm	Month's total rainfall:	153.8 mm
Rainiest day:	31.7 mm on 23 rd	Rainiest day combined:	25 mm on 10+11 th
Rainless days:	9	Rainless days:	2
Highest Max Temp:	28 °C on 14 th	Highest Max Temp:	20 °C on 1 st
Lowest Max Temp:	16.8 °C on 27 th	Lowest Max Temp:	12 °C on 21 st
Highest Min Temp:	16.8 °C on 22 nd	Highest Min Temp:	14.1 °C on 1 st
Lowest Min Temp:	6.7 °C on 8 th	Lowest Min Temp:	3.7 °C on 28 th
Nights with air temp below freezing (0.0 °C and below):	0	Nights with air temp below freezing (0.0 °C and below):	0
Windiest day date: 8 th Direction: N.N.E. Wind speed: 30 MPH		Windiest day date: 12 th Direction: N.N.E. Wind speed: 25 MPH	
Wakehurst Place Weather:	November 2019	Wakehurst Place Weather:	December 2019
Month's total rainfall:	149.2 mm	Month's total rainfall:	172.5 mm
Rainiest day:	31.9 mm on 26 th	Rainiest day:	36.2 mm on 19 th
Rainless days:	5	Rainless days:	6
Highest Max Temp:	14.7 °C on 1 st	Highest Max Temp:	12.2 °C on 19 th
Lowest Max Temp:	7.4 °C on 19 th	Lowest Max Temp:	7.1 °C on 17 th
Highest Min Temp:	10.2 °C on 2 nd	Highest Min Temp:	8.2 °C on 20 th
Lowest Min Temp:	-0.6 °C on 9 th	Lowest Min Temp:	-1.2 °C on 2 nd
Nights with air temp below freezing (0.0 °C and below):	2	Nights with air temp below freezing (0.0 °C and below):	2
Windiest day date: 9 th Direction: ESE Wind speed: 21 MPH		Windiest day date: 16 th Direction: SSE Wind speed: 33 MPH	

Data kindly provided by Carol Hart, who records the details at Wakehurst

©RBG Kew, Wakehurst

Kew Guild Medal Recipient: Laurie Dewar Olin

by Peter Styles

Laurie is a distinguished American teacher, author, and one of the most renowned landscape architects practicing today. Born in Wisconsin and raised in Alaska, Laurie studied civil engineering at the University of Alaska and pursued architecture at the University of Washington, where Richard Haag encouraged him to focus on landscape. He practiced in Seattle and New York before traveling to England on a John Simon Guggenheim Fellowship in 1972-1973 and to Rome as a Fellow in Landscape Architecture at the American Academy in Rome in 1974-1976.



In 1976 Olin and Bob Hanna formed the firm Hanna/Olin. The Philadelphia practice was instrumental in creating or restoring urban landscapes which transformed how people experience city life. They practiced together until 1996, when Olin and senior staff members formed the Olin Partnership. In 2008 the firm rebranded themselves as OLIN. He is currently Practice Professor of Landscape Architecture at the University of Pennsylvania, where he has taught for 40 years, and is former chair of the Department of Landscape Architecture at Harvard University. Laurie is a Fellow of the American Academy of Arts and Sciences, a Fellow of the American Society of Landscape Architects, and recipient of the 1998 Award in Architecture from the American Academy of Arts and Letters. He is the recipient of the 2012 National Medal of Arts, the highest lifetime achievement award for artists and designers, bestowed by the National Endowment for the Arts and the President of the United States. He also holds the 2011 American Society of Landscape Architects Medal, the society's highest award for a landscape architect. Recently he received an honorary Doctor of Arts from the University of Pennsylvania.

From vision to realisation, he has guided many of OLIN's signature projects, which span the history of the studio from the Washington Monument Grounds in Washington, DC to Bryant Park in New York City. His recent projects include the AIA award-winning Barnes Foundation in Philadelphia, Pennsylvania and Simon and Helen Director Park in Portland, Oregon.

My First 20 Years Recording Phenology at Kew

by Sandra Bell

Perhaps I should begin by defining first what phenology is. It may best be defined as the study of the timing of natural events in relation to the weather or climate. Natural events may be many and varied including the dates of the return of migratory birds to their summer breeding grounds, the spawning of frogs or the fall of the first ripe conkers but at Kew, the most frequently recorded events are the opening of the first flowers on a variety of plants in the collections.

April 2020 will mark my first 20 years recording phenology at Kew. I began in April 2000, returning from maternity leave to a new, part-time, position as Wildlife and Environment Recording Coordinator. One element within this broad remit was to continue and build upon the monumental legacy of previous records generated by Nigel Hepper. Nigel recorded the opening of the first flowers of garden plants from his boyhood in Leeds until the end of his life in 2013. When he started work at Kew in 1952 he began recording first flowering dates in The Gardens as he walked or cycled through the collections, simultaneously recording in his own gardens as well. Even long after retirement he gave me lists of first flowering dates gathered as he attended meetings at Kew or came in to continue his research. Nigel's notebooks are available to researchers in the Archives at Kew and further description of his recording can be read in the article which his son David published in the Kew Guild Journal 2014.



Daffodils such as *Narcissus pseudonarcissus* are opening weeks earlier than in previous decades

After retirement Nigel became increasingly concerned to ensure the continuation of his legacy of recording and he agreed a new recording project with the then Curator and Gardens Development Unit, the Kew 100, which was intended to provide valuable data and be manageable in a few hours each week at the same time. Flowering in one hundred plants in the outdoor collections encompassing both exotic and native trees, shrubs, perennials, bulbs and biennials would be recorded in perpetuity starting in January 2000 and in April I became the second recorder following the departure of the first one. In addition the responsibility for inputting all new flowering records and all Nigel's previous records, many thousands in total, to a new, purpose-built database was formalised.

Recording the opening of the first flower of 100 plants sounds very enjoyable and it is. Hardly like a job at all as I've been told on more than one occasion! So enjoyable that since I left Kew in 2014 I have been fortunate enough to continue as a voluntary recorder. Back in 2000 as the project got under way it became clear very quickly that some provision for succession was needed as plants were removed from the collections for a variety of reasons and so another 100 other accessions of plants of the same 100 species were added and then a third. Horticultural Volunteers took on the extra recording and databasing and a huge thanks are due to Myra Miller, Liz Noble, Marion Piper, David Rowe, Margaret Sorrell and Geoff Williams for all their work as well as my family John and Hazel for their help and wholehearted participation when extra visits were needed to catch flowers which opened during public holidays and during the gathering of New Year's Day flowering lists.

A couple of years into recording it started to become apparent that many plants, especially the spring flowering species were, in the main, opening earlier than in previous decades and the following years confirmed this. We must all be aware from our own experience that the growth and flowering of the plants with which we surround ourselves varies a lot depending on the weather. In view of this caution is needed in interpreting the accumulating data and it would be unwise to claim that flowering has become earlier overall on the strength of the effects of one or two warm winters. Accordingly, the flowering dates were averaged by five year blocks and then by decades and compared with the averages drawn from Nigel's earlier records. The evidence for some quite substantial shifts in flowering proved startling. Just to give a taster it would seem that at

Kew, the flowering of Daffodils, *Narcissus pseudonarcissus* has consistently moved forward decade by decade since the 1950s when the average opening date was 9th March while it is now 27th January. Since the 1980s Wood Anemones, *Anemone nemorosa*, are flowering 19 days on average while Snowdrops, *Galanthus nivalis* have advanced by 11 days as have the Lilacs, *Syringa vulgaris*. There are many more examples all from plants which open in the winter through until early summer. The phenology of the rest of the year is much more difficult to untangle.

Inevitably climate change is seen as the cause of these changes and that is reinforced by our own experiences, since many of us remember when we used to get “proper winters” with weeks of snow even in the south! I feel sure myself that we have here very tangible evidence of a warming climate which, while it may have resulted in a rise of the global temperature by 1 degree centigrade is also causing much more immediately acute local changes in many places. Whilst we have accumulated a lot of data already and made some interesting discoveries along the way there is much, much more we can glean from studying the phenology of the collections here and there are so many questions to ask and attempt to answer. Does the flowering time of long-lived trees change as they age independently of climate? Do the flowering times of plants in cultivation vary consistently with the points at which they were collected within their geographical ranges, to name but two which will take many years of recording and analysis to unravel. I’m looking forward immensely to more recording.

The Orchid Festival 2019 - Colombia

by Elisa Biondi (Princess of Wales Conservatory Supervisor)
and Scott Taylor (Conservatories Manager)

In 2019 Kew Gardens hosted its 24th Orchid Festival and the first with a Colombian theme. This annual festival is one of the most important events at Kew and it helps to increase visitor numbers, but most importantly, helps to deliver Kew’s message and showcase the different works that Kew does. It takes around a month to physically build the displays, but the planning and design of the festival starts many months before. For this particular year, we first had to think of how we could capture the essence of Colombia through orchids and other tropical plants and come up with design ideas. Another very important part of it is sourcing the plants. The plants we use are mainly hybrids and, as at Kew we grow mostly rare and endangered species, we have to outsource them from several



nurseries in the Netherlands. We usually visit them in the summer to see what’s new and what will be available in January to put on display for the public.

During January our team is solely focused on building the displays; this includes attaching hundreds of Phalaenopsis and Bromeliads on pillars around the glasshouse, many of which are quite tall, so we need to strap ladders and train new students to go up and down carrying plants in a safe manner. It is not just the Princess of Wales Conservatory’s core team, Kew Diploma Students, Apprentices and Special Certificate

Students who contribute to the Festival, in fact there are usually about 100 volunteers (individuals, staff and corporate ones) who greatly contribute to bringing the displays to life. It is a big effort placing all of the plants on the displays; last year we had 10,300 plants in the festival, including 6,200 orchids (1,200 of which were South American hybrids) and 2,540 were bromeliads. To design the festival, creativity is needed but there are several other things to consider: the health and safety and feasibility, but also the cost and especially the durability of the plants. This is why, for example, we mainly use *Phalaenopsis* to clad the big pillars as they are very long lasting and reliable. The plant deliveries can also be tricky. We have three of them in total and the first one is the most difficult as it is the biggest with over 5000 plants! The logistics onsite mean we can't get all the plants in at once due to space so we plan the tasks required during the build according to when plants are delivered. The cold January weather isn't favourable when you have to move tropical plants around! They all go into a temporary storage building to be checked by our Plant Health Officer to make sure they aren't carrying any pests or diseases before plants are moved to the POWC.

Colombia is blessed with an extremely diverse landscape, from tropical beaches to high mountains, from lush tropical forests to grasslands. This makes it the most biodiverse country for orchids in the world, boasting over 4,000 species, so we thought it was the perfect choice for one of the Orchid Festivals at Kew. It is also the second most biodiverse country in the world, only behind Brazil, a much larger country! Kew is currently carrying out a great deal of exciting scientific work in Colombia to help identify, protect and promote the country's biodiversity. Since the end of the civil war in Colombia, huge areas of the country previously unknown to science are now waiting to be explored and Kew's scientists, working with their Colombian counterparts, are undertaking field trips to discover new plants, aid conservation efforts, and promote sustainable development in the country.

The flora is certainly fantastic and consequently also the fauna. For the 2019 Orchid festival, we were so inspired by the many animals this country has that we made 10 animals in total: two panthers, two spoonbills, one capybara, one Amazon river dolphin, a turtle, a toucan, a sloth, a tapir and one Andean condor. It took about 10 days to complete the central pond display which featured in fact a 'carnival of animals' depicting the toucan in flight, the hanging sloth and the swimming turtle, all composed of stunning orchids, bromeliads and other tropical plants. We also had a butterfly installation featuring 1,000 red, blue and yellow paper butterflies – the colours of the Colombian flag. It took us many tea and lunch breaks and the effort of staff and students from the other glasshouses to prepare them. All the metal work in this year's display, including the mysterious El Dorado installation, was created by Alex Moore from Made by Moore.

If you are wondering where all the plants go once the festival is over, some are kept on display in the Princess of Wales Conservatory or join the collection behind the scenes in the Tropical Nursery; the remainders are sold to staff and volunteers. Those that are too tired are composted onsite. After Brazil, India, Thailand and Colombia, in



2020 it's the turn of Indonesia! Using countries as a theme for the festival, gives us the chance to create beautiful but also meaningful displays that relate to something tangible and known to the public. Walking through the Princess of Wales Conservatory you can immerse yourself into a riot of colours but also get a feel of the country and feel like you are visiting it. The tropical setting is the perfect backdrop to showcase Kew's work and the marvels of the Plant Kingdom. We felt very inspired by Colombia, its vibrant culture, the happiness of people, the inspiring flora and the incredible animals. During the past years we have seen a lot of interest on the animals we made, from the public, so it was fun to insert more of them in the design and actually produce the whole concept for the main display around them.

We hope you'll enjoy the Orchid Festival in 2020 and the wonderful plant stories of Indonesia. The Festival starts on the 8th of February, it is already looking fantastic. This exhibition is a labour of love of many proud and passionate people and we wish the public to enjoy and feel the dedication that has been put into it.

Climate Change and Gardens

by Richard Bisgrove

In the 17 years since Paul Hadley and I wrote our report *Gardening in the Global Greenhouse* for the UK Climate Impacts Programme (UKCIP), climate change has evolved from a serious concern for scientists to a matter for daily headlines in the media. Currently (late November) there are flood warnings across the UK and major floods in the Don Valley and elsewhere. How different from a few months ago when we were desperate for rain.

I well remember the summer of 1976 when our lawns went crispy brown after months of high temperatures and drought. This was followed in October by heavy rains: I marched students around Reading University's teaching garden in the mud looking at the effects of the drought, but in ten days the lawns were green again. Last year, 2018, our own lawn went brown. The rains came but the lawn failed to recover. We had to cultivate and re-sow, and in 2019, despite our environmental misgivings, we even watered the lawn twice to prevent a repeat disaster. Although it is unwise, some would say impossible, to attribute any single weather event to climate change, it is increasingly obvious that weather patterns are changing and extreme weather events are becoming much more common. Our 2002 report was based on UKCIP climate change scenarios ranging from low through medium-low to medium-high and high, based on our rate of carbon dioxide emissions. This week the Intergovernmental Panel on Climate Change has announced that even the 'high' level of CO₂ emissions has been exceeded, so where does this leave us?

My own view is that, in our domestic gardens, climate change will have little impact. Even with the current rate of change orders of magnitude greater than natural background change since the last ice age, the change in the next 20-30 years will not affect our gardens nearly as much as will changes in fashion or changes necessitated by the natural growth and decay of garden plants. Floods and droughts, often both in the same year, will continue to plague our gardening efforts, perhaps with somewhat greater regularity but that is not a change from our current circumstances. Of course, for those involved in the conservation of historically important gardens the challenge is somewhat greater but conservation itself is evolving as an art and science. We no longer have elm avenues, the future of ash woods is in doubt and we face battles with leaf miner of horse chestnut, oak processionary moth, box blight/caterpillar and a host of other problems brought about by international travel (and accentuated by climate change?) but 1970s attempts to restore gardens 'authentically', essentially to freeze them in time, have evolved into the development of conservation

management plans in which the essential ‘significance’ of a garden is respected in a changing social and physical climate.

However, to fuss about the colour of our lawns when the world as a whole may be facing disaster seems trivial in the extreme. I have always thought, in my more pessimistic moods, that humankind as a whole will be incapable of solving the world’s problems. Hoping that politicians will think beyond the next election and that oil giants and other multinational companies will forego profits merely to save humankind is wishful thinking. In the United Kingdom we are fortunate that 21st Century climate change will not be an unmitigated disaster, buffered as it is by the modifying effects of the seas around us. Perhaps London and other coastal cities will come to resemble Venice but we have rescue services and insurance policies don’t we? But in those parts of the world where whole countries are living at or below sea level, or food supplies have literally dried up after years of drought, or forest fires devastate the landscape the consequences of climate change are terrifying to contemplate.

What, then, can we – and especially we horticulturists – do? In the introduction to our 2002 report we said ‘By regarding the garden as a microcosm of the wider environment and using it to develop and demonstrate practices which will alleviate effects of climate change, the gardening community has the potential to set an example of good practice which could ultimately alter the course of climate change.’ In our garden, with gravelly soil over chalk, the native soil has an organic matter content of 8.6%. Under lawn this increases to 10.3%. In the vegetable garden, to which garden compost has been added more-or-less annually, the figure is 13.2% and under the small group of beech in one corner of the garden, 24.6%. (Analyses provided by Dr Claire King who lectures in soil science at Kew). Recycling, composting, improving the structure and water-holding capacity of the soil and establishing permanent woody plantings with accumulating leaf litter will all help to create more productive gardens and, on a national scale, a more sustainable, resilient and more biodiverse landscape – a small-scale example of what our world should be.

None of this is new of course but it has quite suddenly become highly topical. Although our worthy efforts to reduce carbon emissions are insignificant in comparison with the massive problems posed by China and the USA, using our gardens to exemplify what can be done to save the planet (or more correctly to save humankind – the planet will survive without us!) must help to nudge the politicians to chart a more sustainable future. To adopt a well-known advertising campaign, ‘The future’s bright. The future’s horticulture’.

Heritage Open Days in Farnham **A Brief Account of what one Old Kewite gets up to after retiring** by Peter Bridgeman

Having reached age 65 some 14 years ago and with the state and private pensions available it was the right time to retire. The problem was, apart from my family and Aldershot Town FC, my main interest was still plants and trees. I moved to a smaller house with a larger garden which kept me busy for a few years and luckily, I lived in a smallish town with a rich architectural heritage, natural and man-made landscapes and a wealth of native and exotic trees.

I joined the local civic group, The Farnham Society and was chairman of their Planning Committee. That soon became repetitive, looking at planning applications, but the real problem was that the committee included three former architects and they could never agree on anything! Then the Heritage Open Days (HODs) caught my attention. This is



500 year old English oaks in Farnham Park

promoted nationally by the National Trust (NT) and locally by The Farnham Society and is an annual event in mid-September. Although initially concerned with public access to otherwise closed historical buildings, it has broadened to include the people who lived or worked there together with more general aspects of our heritage such as landscapes and historical events. For example, in 2018 the NT's main theme was *Green Spaces* and this year *People Power*.

I joined the HODs committee and became involved with finding venues and taking photographs for the brochure. With my background of trees, I was asked to host tree walks and these developed into 'Virtual Walks' or *PowerPoint* presentations on trees and other issues. The Town Council picked up on the wealth of trees and produced a Farnham Tree Trail leaflet featuring some 40 of the best. The walks carried out include mainly exotic trees in central Conservation Areas and, although there is nothing that rare, they do feature trees that the public find interesting like the Indian bean tree (*Catalpa bignonioides*), the pride of India tree (*Koelreuteria paniculata*) and the Katsura (*Cercidiphyllum japonicum*). I have found seven species of oak and five cultivars of beech. One of the best trees is the Tatarian maple (*Acer tataricum*). This is of interest as it does appear to be tolerant of warm, dry and therefore drought conditions. (This was identified with the help of Peter Thurman, a fellow Kewite and plantsman).

Other walks include trees in the 320-acre medieval Farnham Park which feature a number of 500-year-old ancient oaks. There is also a very important group of native oaks (*Quercus robur* and *Q. petraea*) standing at Hale War Memorial. These trees were grown from acorns collected from the war zone of the Battle of Verdun, Northern France in 1916. This was one of the longest and bloodiest battle of the WWI lasting nearly a year and with hundreds of thousands of casualties. Trees raised from these seeds were sent to many war memorials and gardens. I believe two were planted at Kew in 1919. One had to be felled in 2014 following storm damage, its timber was used to make the Verdun Bench situated under the remaining tree on the Cumberland Mound. Another was planted at Sandringham, my place of work before Kew. One notable feature of the park was an elm avenue, (*Ulmus procera*). These succumbed to Dutch elm disease in the 1970s and were replaced with limes and beech. The Forestry Commission, at the nearby Alice Holt Research Station, suggested planting Japanese elms (*Ulmus davidiana* var. *japonica*) as it was thought they would be resistant to the disease. This has proven to be the case but due to structural weaknesses, some have now been felled after just 45 years. Apart from trees, I also get involved with other aspects of

A weeping beech hemmed in by more recent buildings



the town's heritage. As the 2019 theme for HODs was *People Power* I researched famous people who have connections with the town and presented a talk entitled 'Farnham's Finest'. This started with the Bishop of Winchester who built Farnham Castle in the 13th Century, through to the social reformer William Cobbett MP (1763-1835) and authors like George Sturt, Izaak Newton, Jonathan Swift, Sir JM Barrie and Sir John Verney. Famous sportsmen like Mike Hawthorn, Johnny Wilkinson and Graham Thorpe and from the stage and television - Michael Ball, Jessie Matthews and Martin Clunes, have all lived or were educated in the town.

As with most historic towns, Farnham has its share of commemorative plaques with some fifty around the town. I have carried out a survey of these and surprisingly found a few historical and grammatical errors. One of the town's most important figures was William Cobbett MP (*Rural Rides* and the founder of *Hansard*). The plaque at his birthplace correctly gives his birth date as 1763 yet on his grave in the local churchyard it reads 1762! Two plaques commemorating Queen Victoria's Diamond Jubilee give her the title Queen Victoria 1st. You don't get an ordinal number after the regnal name until there is a second, i.e. Queen Elizabeth II. In any event if the monarch does have an ordinal number it should be written in Roman numerals. Another error was a plaque commemorating the first two minutes' silence for the war dead and injured in 1916, an important event to commemorate but the problem was they put it on the wrong building!

Getting back to vegetation, most of our town's trees are facing increasing pressure from new developments and limited finances to maintain what remain and to re-plant. We should all do our bit to publicise the problems, to save the existing tree cover and plant new ones as part of the continuing battle to combat these pressures and, in particular, the reality of global warming. Now I'm approaching 80 the larger garden is becoming too much for me. I may be physically waning but keeping abreast of all those pesky botanical names keeps my brain active. To help my sagging body parts I still do a fitness session once a week as well as yoga and trying to eat healthily. This all helps to stave off getting too close to the dreaded gaga land!

The Kew Guild Medal

by David F Cutler

It is hard to believe it is 15 years since I first suggested to the Kew Guild Committee that we should consider having a medal struck to recognise people of outstanding merit in topics close to the interests of the Guild. The Committee set up a small working group to develop the idea. On the basis of their report it was agreed to go ahead because the initiative was seen to 'raise the profile of the Guild, to recognise personal achievements and spend the money of the Guild in a wise and constructive manner.'

The initial criteria devised by the working group have been revised since they were first set out, and the most recent revision, in 2018, states them as follows:

"The Medal is awarded for outstanding merit in the furtherance of one or more fields of interest of members of the Kew Guild. For example: Scientific or amenity horticulture, Plant systematic research, Plant or habitat conservation and Horticultural Education. Other relevant fields of interest can be considered. The recipient need not be a member of the Guild."

It was agreed that the Medal should be presented at the Annual Dinner or the Annual General Meeting unless the recipient or their representative is unable to attend, when other arrangements can be made. It was also agreed that normally the Medal should be awarded

every two or three years, and exceptionally on consecutive years. However, as you can read below, there was no shortage of suitable candidates and after 2014 a medal has been awarded in each of the following years. Kewite Anthony Ross was invited to design the medal, and although somewhat taken aback by the request, consulted a



medal die and engraving specialist company in Twickenham about practical matters and put his considerable skills to producing the exquisite medal. A first batch of ten was struck. The medal is silver gilt, weighs 50g, is 50mm in diameter and 2.5mm thick. The 2006 Journal cover showed the Medal, together with a short article by Anthony Ross on page 78 of same.

Initially the nominations for the medal were made by a Medal Awards Sub-Committee. This consisted of the President of the Guild with John Simmons, John Edmundson, Prof. Gren Lucas, Dr. Thomas S. Elias, David Hardman and David Cutler (Secretary). This functioned very effectively, but in due course the members of the Kew Guild Committee decided that they should take full responsibility for receiving and deciding on the nominations and the Sub-Committee members were thanked for their work and the Sub-Committee was disbanded. I continued to be responsible for seeing the process through the Guild Committee until I retired from this role in 2019.



David Cutler

Nominations are most welcome from all members of the Guild and should be sent to the Kew Guild President. It is very important that when making nominations you shouldn't tell the nominees! Medalists up to the time of writing are as follows:

2007 Roy Lancaster, 2009 Raymond Desmond, 2010 Alan Barber, 2012 Noel McGough, 2014 Sir David Attenborough, 2015 Christopher Brickell, 2016 Alan Titchmarsh, 2017 Christopher Beardshaw, 2018 Martin Duncan, 2019 Laurie Olin.

I would like to add my thanks to Richard Ward for his help in gathering data for the article.

Peter Styles - We have recently received ten new medals. We used a mint through our Welshpool printers so thereby keeping things in house so to speak and making it easier for ordering.

Spec is: Design and Development - 50mm Obverse @ £940.00, 50mm Reverse @ £780.00, 10 off H M Silver, 2.5mm thick Collar Medal, gilt finish, in a standard presentation case 50mm @ £196.00 each. These were provided by Toye Kenning and Spencer Ltd, London. They are by Royal Appointment to Her Majesty The Queen and the medals were cast in their factory in the Birmingham Jewellery Quarter.

Single Use Plastics

by Ashleigh Davies

Single use plastic waste has become an infamous problem in recent years and next to the food industry, horticulture is one of the biggest producers. As part of a campaign to reduce plastic waste in the town, a community group called Malmesbury Against Plastics have been planning a workshop to run with local residents in February 2020 to explore how they can achieve seasonal colour in their gardens without buying plastic bedding trays and pots. The activity will focus on three areas: plants for containers, direct sowing and pottager style planting.

Using paper pots and mole hill soil as seedling compost participants will be able to sow a range of seeds which work well together in a container including *Agastache* 'Liquorice Blue,' for height, *Lobelia erinus* 'String of Pearls,' to trail, *Salvia splendens* 'Blaze of Fire' for contrasting colour and *Cerinthe major* for interesting foliage. Sweet peas are another good candidate for growing in paper pots as their roots dislike disturbance so they actually benefit from being planted in their biodegradable pot which then rots away. For direct sown annual colour, participants will be shown how to dig and rake an area to prepare it for sowing with a relatively easy, robust mixture of Cornflower (*Centaurea cyanus*), Love-in-a-mist (*Nigella damascena*), Cosmos (*bipinnatus*), Poppies (*Papaver somniferum*) and Flax (*Linum grandiflorum*) varieties to be recommended. These plastic free flowers will also provide food for beneficial insects.

As bagged salads create plastic waste as well as being one of the most commonly wasted foods in the UK, making space to grow some at home can help the environment on two fronts not to mention being good for you. To avoid any confusion between edible and non-edible species, it was recommended that people try mixing radish, calendula, nasturtium, and lettuce seed for a low input flowering vegetable patch.

Malmesbury resident and local anti-plastic campaigner Mandy Dobson explained, "we think we can't live without single use plastic but actually these products have all come about in the last thirty years or so, our grandparents didn't need this stuff and neither do we. Although it can feel there is not much a single person can do, every pound you spend is a vote about the type of world you want to live in and as soon as consumers stop buying plastic businesses will listen. For plastic free supplies you can visit a seed swap event, they are held throughout the country - just check the internet to find one near you."

The event is part of a larger campaign to receive 'Plastic Free Community' status for Malmesbury from the charity Surfers Against Sewage. The charity are campaigning against pollution of the ocean and as inland towns generate much of the plastic waste which ends up in the sea, it is important to tackle it at the source. The award is given to communities who have significantly reduced single use plastics in their schools, businesses and social spaces. If you are interested in becoming a plastic free town or just reducing your own plastic footprint the Surfers Against Sewage and Malmesbury Against Plastics websites are a great place to start - <https://malmesburyagainstoplastic.com/>. © Ashleigh Davies

A Survey of the Oriental Chestnut Gall Wasp at Kew

by Hazel Gregory

The Oriental Chestnut Gall Wasp (*Dryocosmus kuriphilus*) is becoming an increasingly threatening, widespread horticultural pest, parasitizing many species of tree belonging to the genus *Castanea*. Although it is native to China, it can be found across Asia, North America and parts of Europe. Flying insects such as *D. kuriphilus* have a natural ability

to expand their range by hundreds of metres, but long-distance spread is believed to be facilitated by movement in vehicles travelling internationally. This is also aided by the transportation of infested plant material, including plants to be sold commercially and branches or foliage removed after forestry operations.

D. kuriphilus parasitizes trees by laying eggs in the tree's developing buds during early summer. This insect replicates using a process called thelytokous parthenogenesis, whereby females are produced from unfertilised eggs, so a male of the species has never been observed. Larvae hatch but do not begin to develop until the following spring. This induces the tree to form a gall which protects the larvae until they emerge as adults. Galls then become woody over time, a process which can disrupt the fruiting of the tree, leading to a reduction in yield of 50-70% according to commercial growers. The emerging adult wasps also leave an opening through which pathogens can enter the tree, notably the fungus *Cryphonectria parasitica*, causing Chestnut Blight.

My first survey of the effect of *D. kuriphilus* on Kew's world-class collection of *Castanea* trees took place in the summer of 2018. The main aim of this was to qualitatively test the ubiquity of infestation symptoms in Kew's resident species: *Castanea sativa* (European sweet chestnut), *C. mollissima* (Chinese chestnut), *C. crenata* (Japanese chestnut), *C. dentata* (American chestnut), *C. seguinii* (Seguin's chestnut) and *C. henryi* (Henry's chestnut or Chinese chinkapin). I found evidence of infestation in all species except *C. henryi*, of which Kew has four individuals. In total, 93 trees were inspected, only 8 of which did not exhibit any galls. As well as the four *C. henryi* trees, this included one *C. mollissima*, one *C. sativa*, and two *C. sativa* 'Heterophylla Nova'. The following year, I opted for a quantitative approach, counting the number of galls I found in one metre's worth of branch (measured from the tip), testing five branches on each tree. The most heavily affected species was *C. sativa*, with an average of 19 galls per metre. This was also the most variably affected species, with a few individuals' averages being lower than 10 galls per metre, but many exceeding 20 galls per metre. The most heavily infested individual also belonged to this species, with 44 galls per metre and exhibiting signs of dieback, although this cannot be wholly attributed to the *D. kuriphilus* infestation. Several cultivars of *C. sativa* were also observed. Although 'Albomarginata' and 'Marron de Lyon' had marginally more galls than the original *C. sativa*, most cultivars were less heavily infested, the least being 'Filipendula', 'Glaberrima' and 'Pyramidalis', none of which exceeded an average of 10 galls per metre of branch.

C. dentata and *C. seguinii* were almost as heavily affected as *C. sativa*, both with an average of 15 galls per metre. *C. crenata* was among the least affected species, with an average of 8 galls per metre, as was *C. mollissima* with 4 galls per metre. *C. henryi* remained the only species of which no individuals were affected. Originally I thought this



may be due to the size of the trees, as three of the four individuals at Kew are relatively young trees. However I have since seen galls on comparably sized *C. sativa* individuals, so this is probably not the case. Furthermore, the older tree of this species also shows no signs of galls. It is also important to note that the *C. henryi* individuals are not isolated from the other species. Two of them are in area 255 (opposite the lake, across Syon Vista), in which most species have at least one individual. In fact, the largest

C. henryi overlaps branches with an infested *C. sativa*, yet still remains free of galls. Finally, all four of the non-*C. henryi* individuals which were free of galls the previous year had developed them between surveys, suggesting a rapid spread of infestation between species apart from *C. henryi*. I intend to repeat the survey again this coming summer, in order to get an idea of the rate at which the trees become more infested and I would love to find out why *C. henryi* is yet unaffected by *D. kuriphilus*. I would like to thank Senior Plant Health and Quarantine Officer at Kew, Sara Redstone and Senior Entomologist at Fera Science, Chris Malumphy for giving me the opportunity to carry out this fascinating and enjoyable survey.

5 Points for Genus

by Tim Stafford

Identifying plants is my favourite bit of the Kew Diploma. It's the most difficult, the most frequent, and the most awkward of all the disciplines we're taught, but in every test I think, "This is what I'm here for." It's well worth the odyssey of tracking down the pinnate specimens, and the bafflement of telling apart the Japanese and European flavours of larch.

We've covered a lot in 15 months. Every ilk of plant has featured, some once, and some like soundtracks on repeat: Malvaceae, for instance, has stuck its mallow leaves forever in my mind, but I still have no idea what Anacardiaceae is on about. Poaceae had a test all to itself, because not all plant families are created equal, whilst the number of families in the Temperate House test was so wild that I'm fairly sure Corin made some of them up.

Sometimes we get a plant ident that has no plants to ident. This has varied from the Specific Epithets, which were something pleasant to learn whilst having tea and muffins; to Pests and Diseases, which was on a level with trekking the Pennines in a Category 5 without a map or bootlaces. Economic Botany was an interesting one, because we started with *Cibotium barometz* and I thought we were doing a livestock ident until someone explained that the bit about the Lamb of Tartary was a myth. Conifers was our most recent test, and the one that I enjoyed like the terrier enjoys taking on the Irish wolfhound. I really felt I attained a fine level of botanical observation during those two weeks, and even as I slip back to my standard of dividing evergreens into 'It's got fronds' and 'It looks like a yew but pointier', I shall fondly remember the days when I fell upon the pellucidity of *Sequoia* foliage quite by chance; I felt grander than Hooker editing a botanical encyclopaedia.

Plant idents are good things. It's a reason to get into the garden or glasshouse, to look at the flowers that made us all become gardeners in the first place, and to explain judiciously to our fellow students why it was unfair to place these two species in the same ident. It's a curve of looking, learning, and imploring our brains to remember. It's a botanical lark. It's very satisfying when we get it right; and the plants are smashing even when we don't.

Committee Deliberations During 2019

by Richard Ward

In no particular order members may be interested to know that your Committee met five times during the year. Amongst the many varied items discussed were: This year saw the final pieces put in place for the Guild to become a Charitable Incorporated Organisation (CIO) and much Committee time was spent on this. The new intake of Diploma students were invited for supper with Committee members; outside events/visits for members; Guild website; Kew Guild Medal; Guild archives and their conservation; closer ties with Students; promotion of an Apprentice/Trainee Discovery day; Guild accounts, and finance

matters including online banking; Printer quotes for the Journal; copyright matters; Fellowship of the Guild; Kew Guild Awards; Past Presidents' badges; Guild constitution and handbook; George Brown memorial Award; Annual Dinner; Trustee positions; Stella Ross-Craig illustrations copyright; attracting new Guild members; social media; Guild insurance; and investments; Guild copyright issues; removal of Committee Advisors; legacies.

100 Years Ago

by Richard Ward

Holding a 100 year old Kew Guild Journal in your hands offers awe-inspiring feelings. Even as the first world war was ending Kewites were volunteering to edit our Journal, or offer Secretarial help. And without help from computer technology. There was a strong and enduring feeling of fellowship between Guild members. The 1919 Journal reported that 50 Guild members attended the AGM - around the same as in 2019. Over 150 Guild members were serving with His Majesty's forces abroad and much of the Journal was given over to their news from the front line. The idea of a WW1 memorial in Kew Gardens was mooted at the AGM. Women gardeners received the same rate of pay as men. Optimism about the future shone through. As it does today.

News of Kewites

Rebecca Bower: 2019 has been another enjoyable year of holidays, family and friends! The first holiday was in February when I spent a week in northern Sweden doing some snow-shoeing, cross country skiing and husky dog sledging (great fun and the huskies were adorable) and finishing with a night in the Ice Hotel – definitely an experience! The end of March saw me in Japan on a group tour and we visited Tokyo, Kyoto, Hiroshima and several other places and saw the snow monkeys, surprisingly with snow around as there was a late fall. We did several journeys by bullet train, had great views of Mount Fuji, and the cherry blossom in Tokyo was at its best. Overall, though, I wasn't blown away by Japan, but it was an interesting trip. Next up I went on a walking holiday in the Carpathian Mountains in Romania - the scenery was very unspoiled, the wildflowers glorious, there were wild bears in the forest and we had a day trip to Dracula's castle - lovely group and all very enjoyable.

Mid-September I went off to South Africa for a month. The first two weeks were spent on Phinda Reserve where I worked as a volunteer helping to monitor the mammals on the reserve. It was absolutely brilliant and I loved it! We went out every day with the ranger (there were two other volunteers the first week and three the second) and recorded what



we saw and where. The highlights were helping to track a black rhino which we then watched being darted by the vet from a helicopter and having a new tracker fitted, watching an operation on the leg of an injured cheetah, and taking a pangolin for a walk! The Reserve has a pangolin re-introduction programme and they have a young one not yet ready to fend for himself so he is taken out each afternoon to practice digging into termite

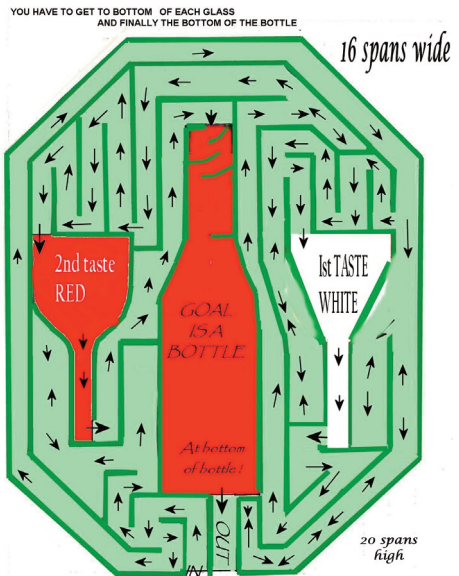
mounds – he was a real character and it was a delight to be so close to such an endangered species – the most trafficked mammal in the world at present. After the Reserve I went to Cape Town and looked round there for four days before joining a group tour of the Garden Route. I loved Kirstenbosch Botanic Garden and the Fynbos flora, we went to the Cape of Good Hope – the most south-westerly point of Africa and Cape Agulhas, the most southerly point, we saw whales and we visited an African Penguin colony which was very entertaining.

Unfortunately three days before the end of the holiday I stumbled badly so had to miss out on a couple of the walks and by the time I got back to Exeter my leg was very swollen (though not actually hurting) and a trip to A&E revealed the small leg bone was broken just above the ankle! I was in plaster and non-weight bearing for 10 days but then changed to a protective plastic boot and life became much easier. This was good news because five weeks later I was off on my final holiday of the year with a friend to California. We visited San Francisco, Sonoma (for wine tasting!), San Diego, lots of coastal towns and beaches and had a day at Disneyland. In-between holidays I have had several trips around the country to visit friends and I have been busy with my various volunteering activities too – Trustee of Bentham Moxon Trust back at Kew, Trustee of Exeter St James Community Trust, helping at Exeter Foodbank, and doing habitat management work on Devon Wildlife Trust (DWT) reserves. I have recently been appointed as a Trustee and Treasurer of DWT and am looking forward to becoming more fully involved with them next year.



Graham Burgess: Something that may interest Kewites with a wide range of contacts and skills. We have long had a Halloween Festival and the inputs get greater. I am launching a new festival called *HelloAllWines*. The focal period this year is October 15th - November 18th. Many of our festivals are linked to plants and they served as practical ways of focussing on key times to ensure ongoing

productivity. VAL EN TINES focuses on the time of the year when values were invested in by using TINES to prepare the earth for seed-sowing. The birds mated at the same time and the next key thing was the eggs hatching, Oestre or Easter was and still is another form of festival. The seeds grew and towards the end of the year they produced cereal crops. These were harvested and care of the stooks included the straw being stacked over drainage grooves in the ground beneath haystacks over 70 feet tall. The groove was originally a helix but later it became a Classic Type 1 Maze, with a fascinating internal geometry. It was dug in what was initially the threshing floor. Called by ancient Greeks Halos. Call to the dance O'Hal; O'Hal. Halls are places of special gathering and Halloween was a focal point as this was where the WEENING took place. We call a maze a maze, the Germans call a maze a Dolhaus, house of the dole and that referred to the straw



**BOTTLE AND GLASSES DISPLAY
AREAS POSSIBLY TENTED.**

copyright design

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being handed out through the winter to feed the cattle. All been going on for thousands of years. The new festival is called HELLOALLWINES. Yes, another crop, grapes and yes, another maze but the maze is laid out as two wine glasses either side of a bottle in a vineyard or as a temporary maze sprayed on grass in a public open space. There are 713 vineyards in the UK and a key thing will be approaching them with regard to the installation of an iconic maze design based on two glasses either side of a wine bottle. Visitors may enter to pick grapes and when they hand them over for thrashing they are given the equivalent of the early credit cards which were called corn dollies in the form of a Wine Dollie. That can be exchanged later for a share of the wine. The same basic design can be enhanced possibly revealing the history of grape cultivars. On a wider scale the same design can be laid out temporarily by spraying on the grass in public greenspaces and doling will be engineered to fit in with existing and new supply lines. So, the Wine Dollie can be exchanged for sips or bottles in nearby tents or in local pubs and hostelryes. All the bottles and dollies will have the copyright logo on them so the prime message is the same nationally. Have a look at the website (<http://helloallwines.co.uk/>) or contact Graham Burgess. You may be able to go down in history as one of the many initiates of a new festival.

World War 1 – Tree Planting. In December 2018 and Feb 2019, 32 pairs of Birch Trees, Tryst Plantings, were put in place by a school in Whitchurch, Hampshire, each one representing a man from Whitchurch lost in WW1. At the same time, we planted another Tryst Planting, where a very special couple visited soon after WW2, namely The Queen and Duke.

PRDS Paradise, The Secret Garden: In 2019 a very special book was published. In it more secrets than in Dan Brown's work. Some of the secrets of Kew's design are included but on a wider level key secrets in designs throughout UK are revealed. How Bory La Tour Marliac named his water lilies, based on codes and his knowledge as a classicist. What is revealed is rebuses, secrets that are not hidden but have been on full view for hundreds of years. The book is published by Austin Macauley, ISBN 978-15289283-7-3.



Jim Emerton – It is so nostalgic to reflect on how my life has involved over such a passage of time. The essence of it all has been self survival, as I could have perished in Afghanistan in '79. My Autobiography "*An Eccentric Genius my Extraordinary Life*", featured on Amazon is serialised in magazines around many places in the world, including Mensa. Beyond the impact of literature, I am delighted to have my head in the clouds and feet on the ground. Today John Whitehead, Barry Phillips and I are closer than ever as remnants of The School of Horticulture, and we have evolved as eccentrics over time - I love it.

Alex George: In July I published a book that I have been working on for several years, a new edition of *Western Australian Plant Names and their Meanings*. Currently the flora contains almost 12,000 species in 1623 genera. About 2000 names were added to the previous edition (published in 1996), showing the progress in discovery of new plants in this vast State. Many species epithets have been used more than once (e.g. *australis*, *drummondii*), hence the number to be explained is 5718. A new section explains the epithets of 896 infraspecific names. The naturalised species (weeds), more than 1300, are included. There's a copy in the Library at Kew. I have also been working on a new edition of the journal of Peter Good, gardener and seed collector on the voyage of HMS *Investigator* to New Holland (Australia) in 1801–03, captained by Matthew Flinders.



The Marianne North Tree, Warren National Park, Western Australia, with (L) E.G.H. (Ted) Oliver (South African Botanical Liaison Officer at Kew, 1968) and (R) the late R.K. (Dick) Brummitt (Principal Scientific Officer, Kew), 24 September 2004.

Research for this includes consulting the archives at Kew where Good's seeds were received and entered in their Inwards Books. Many of these were grown successfully in the Botany Bay House.

I joined a committee of the National Trust of Western Australia set up to recommend registration of Significant Trees. Trees considered of outstanding historical, scientific, social or aesthetic importance are placed on a register. While they have no legal protection, it draws attention to them if there is any threat to their survival. One already registered has a connection with Kew – a Karri (*Eucalyptus diversicolor*) sporting a large burl on its trunk, painted by Marianne North in 1880. 140 years later the tree looks much the same. The painting may be seen in the Marianne North Gallery at Kew.

Jenny Grundy: On the 8th of May 2019 I had my third heart operation; on getting home I got a letter from Kew to say my tree at Wakehurst was to be cut down (I have 12) so I had to phone to see which one. Finally, Ed Ikin at Wakehurst sorted things out. A cutting of the *Liriodendron tulipifera* will be grown on Chapel Lawn. On 9th October Margaret Jones and I visited the Linnean Society and saw the St Vincent art that I had restored through 'AdoptLINN'. On the 5th of November Margaret and I visited Sir Harold

Hillier Gardens where we had lunch as guests of Clare Goddard and David Jewell. The cards of my art chosen by Clare were ready – towards the garden of the future. On my 74th birthday in November, Elizabeth Rollingson of the Linnean Society came and we met with David Jewell. After tea we enjoyed the Kew lights very much. At Christmas I had a card from Ian Hudson, ex-Kew who had chaired KMIS the year I did my greeting cards for Kew, towards trees.

David Hardman: This last year has been very busy and full of distractions regarding dragon boating for cancer survivors both in England and Spain. Referring to last year's

Jan Collins Memorial Festival awards in Torrevieja 2019



Journal, in the obituary about my partner Jan Collins I mentioned her vision for the sport, initially for Breast Cancer paddlers in Spain which through the Flamenco Rosa team has continued to flourish. In March I was invited to attend the Spanish Dragonboat Association's Annual ceremony to accept a special award on behalf of Jan in recognition of everything she had done

for breast cancer survivor dragon boating in Spain. They have now established an annual award in Jan's name to recognise others for their work. It was a great honour for me to present this award to the first recipient, Maxi, who was a great friend of Jan. It is also pleasing to report success in establishing Bourne Water Dragons, they are based in Christchurch and the team achieved charity status in May and is the first All Cancer Survivors Dragon-boat team in the UK. Similar to October 2018 I made the trip to Torrevieja to attend Jan's Memorial Dragon-boat Festival but on this occasion with the new team Bourne Water Dragons, this was really amazing because a lot of people undertook some incredible work to make this happen. For Bourne Water Dragons to paddle against Flamenco Rosa at this event was the culmination of two dreams that we had worked together with Jan in her latter days. It proved to be an amazing trip which was incredibly emotional culminating in many new friendships being made that will continue on for many years to come. The news in October was even better in Spain when I was advised that we



Medals from the festival

now have eleven Dragon-boat teams for Breast Cancer Survivors, with the likelihood of a new team being established in Madrid and possibly even more to follow. Also, Flamenco Rosa have initiated the formation of a new All Cancer Dragon-boat team. In July I was asked to visit Seville with Flamenco Rosa for the European Dragonboat Club Championships where the team was very successful, it also gave me the opportunity to meet many of the ladies from other Spanish teams who were paddling there.

Again, this was very emotional being a great privilege and honour for me to meet so many lovely ladies who were very happy in their "new" life dragon boating, recognising what Jan had achieved to make this so enjoyable for them all. Another unbelievable development was seeing more than twenty young adults with learning difficulties paddling in two teams from San Pedro del Pinatar in the Para-Dragon-boat category.

Something Jan and I had never even envisaged and especially rewarding as one of the boys who is autistic is the son of a lady who has helped the development of Flamenco Rosa right from the very first days when we set out realising Jan's dreams.

It is incredible what has happened in the last twelve months and I'm sure the legacy that Jan has left for so many people who are now part of her dream will continue to grow. So our focus will continue to be towards building Bourne Water Dragons over the coming years to tackle some of the issues regarding other cancers that have affected both men and women. As a charity it will be a matter of raising funds, building the team spirit and going forward by encouraging others at other clubs around the UK to consider what else might be possible to create new All Cancer Dragonboat teams. The opportunities for individuals are unbelievable which include new friendships, fun and exercise with all the social and psychological benefits to face life after dealing with different cancers. In conclusion I feel very privileged to be involved in this amazing project, there is still lots to do so please let your friends know what we are doing and follow Bourne Water Dragons as we go forward. I hope in the future it might be possible to establish new teams where the benefits of this amazing sport can be realised for all cancer survivors who are fit enough to paddle. We still have a lot to do.

Stewart Henchie: Apart from travelling from Teignmouth attending meetings at Kew being a Trustee on the Kew Guild committee, 2019 has been a busy year volunteering.

The year started with the continuation of being a project leader for the SWAMP (St Michael the Archangel, Church Windows and Masonry project) – we thought of it before Donald Trump! This involved the repair and restoration of five very large stained-glass windows and the associated stonework financed by The Heritage Lottery Fund and other major donors and the local congregation. Since returning from Malaysia at the end of 2014 I have been volunteering weekly at the Dawlish Gardens Trust a charity for people with learning difficulties, sensory and hidden impairments on a seven-acre site; my input being mainly horticultural. See <http://dgtdevon.org>.

Teignmouth, a seaside town for holiday makers, a commercial port for the export of clay and a strategically positioned rail link to the SW has a wonderful museum; The Teign Heritage and Shaldon Museum. With another volunteer colleague we have been scanning all the images held by the Museum four hours a week. All these images are then added to



Leo Pemberton at High Garden, Kenton,
Devon, July 2019

a museum curation system called MODES which hopefully will enable visitors to enjoy the collections behind the scenes and on display. See teignmuseum.org.uk. Just in case members think I have forgotten about horticulture, I had my arm twisted to open our little garden under the Devon National Garden Scheme - Group Opening, for Teignmouth during June so lots of work was carried out to get it up to standard. See www.ngs.org.uk. In between all of this Leo Pemberton came to stay in his 'holiday home' his words not mine combined with visits to horticultural places of interest in Devon. Finally, for the last two years I have been the chairperson of the Teignmouth Gardening Club which meets every month except January with a keen and active membership.

Pamela Holt (1971): Although retired I occasionally carry out tree surveys and inspections on a part-time basis such as in the grounds of a local private school. I also worked two days a week for six months in 2018 for a consultancy, sometimes travelling to London to survey areas where electric car charging points are to be installed close to street trees. Currently I work two days a week for Runnymede Borough Council as a Tree Officer where I recently had the privilege of inspecting and specifying work on the Oak trees surrounding the Magna Carta Memorial. In November the Surrey Hills Society received the Queens Award for Voluntary Service. I proudly wear my badge for conducting tree walks and talks for the society.

I still enjoy travelling and exploring with rock climbing in Cornwall at Easter. Jordan in May visiting various archaeological sites from Petra with its Dromedary camels (one hump) and the Wadi Rum to the renowned Dead Sea. Isle of Skye in June with the Pinnacle Club, then Moscow and St. Petersburg in July for the Palaces, Museums and wonderful gardens. August was spent on an organised trip to Mongolia flying with Aeroflot via Moscow to the capital Ulaanbaatar. A rapidly developing city with some very futuristic buildings, prestigious shops, modern hotels, smart cars and well-dressed people. Plenty of modern technology too including drones which a Mongolian mountaineer used to film his friend descending a mountain by snowboard. I used the more traditional method of plodding up and down on foot but was able to stand on three continents as Mt. Nairandal

4180 metres is on the frontier of China and Russia. It was the first time I had seen horses carrying tents and equipment on a glacier. Bactrian camels (two humps) were employed when trekking to base camp. Although many people still live in Gers (the Mongolian equivalent of Yurts) the herders have motor bikes and mobile phones. October - Madeira for the levada walks and variety of vegetation plus the concerts and culture. November - my final trip of 2019 with the Alpine club rock climbing on the quartzite in the Anti-Atlas region of Morocco.

Tony Kirkham Head of Arboretum, Gardens and Horticultural Services at the Royal Botanic Gardens, Kew was awarded the Victoria Medal of Honour on 8th April. In September, Tony was announced as the well deserved winner of the Arboricultural Association Award for Continued Contribution to Arboriculture during the Association's Annual Conference in Exeter. He has also become a Vice president of the Association. Look out for the latest publication he has co-authored "Haynes Workshop Manual of Trees". *Added congratulations to Tony, head of Kew's Arboretum, who was awarded an MBE in the Queen's 2020 New Year Honours list, 'for his invaluable contribution to horticulture over 41 years'.*

Old friends Jean Griffin, Jim and Val Mitchell meet up for a drink at the Black Rabbit



Jim Mitchell: Having leased out our apartment in Manly we became true 'Grey Nomads' living out of our Motorhome and also taking many holidays, travelling abroad and spending many months in our son's weekend in Port Douglas Queensland on the edge of the Barrier Reef and Wet Tropics Rainforest. The Guild AGM in September gave Valerie and I a reason to return to Europe staying in the Coach and Horses, a place that holds many happy memories of the time spent with fellow students in the early sixties. Probably the most memorable was competing against RHS Wisley students in the annual drinking competition and we must have taken the opposition seriously having

won three times needing many heavy training sessions. George Brown the most colourful assistant curator of his time was a very competent judge and adjudicator. The pub has certainly changed and the room where the students organised their lively socials inviting the girls from Richmond Hospital along has been converted into Bed and Breakfast accommodation. It was at one of these Dances that Val and I met, which has given us 56 happy years together. In the sixties the only food served at the Coach and Horses was pickled eggs and bags of crisps, my how it's changed. Before September's AGM we took the opportunity to climb the Pagoda again bringing back memories of the last time we visited in 1965 after completing a search for grasses to complete our Herbarium collection - an event organised by Leo Pemberton.

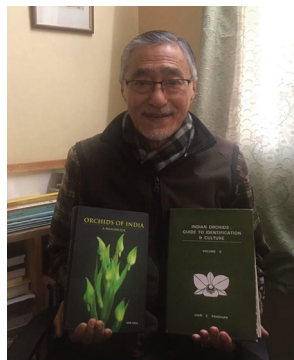
Thanks for all the emails received enquiring about the bushfires in Australia and our welfare. Bushfires and droughts are a way of life in Australia and it was a pity that the overseas press didn't report that there were more serious events on Ash Wednesday in Victoria some 11 years ago when more properties and lives were lost. But this doesn't help the journalists' alarmist climate debate. The big outcome is the need for more practical land managers to be employed to tackle fuel build up on the floors of our forests and

National Parks. Captain Cook wrote in his journal of sighting many fires as he sailed along the east coast of Australia in 1770.

Clive Popham: We have had a busy year, started off by a realisation that the farm was beginning to become unmanageable. So, in January the search for a suitable place to move to was started and the sale of the property was put in motion. Our new abode is in the small village of Buninyong, surrounded by open pasture land and forested and with a couple of Mounts nearby. Over several weekends, with a lot of help from family and friends, sale items were placed out in rows, trips to the tip for rubbish, packing in numerous boxes possessions to take with us and generally cleaning the house and surrounds ready for the new owner, and trips back to Lal Lal with plants and garden valuables for us to collect later.

The big move, with all the family, was on the weekend of July 15. The move entailed our donating and selling the bulk of the orchid collection and the remainder was housed in the new shed on the staging taken from the Boorolite greenhouse, unfortunately as there was no way of installing any heat we lost quite a few over the winter. However, we purchased a replacement greenhouse from the same firm, and yet again the Lal Lal crew came and helped us put the kit together, but before that we took a day to clear a site of overgrown geraniums, a giant very prickly rose, various dead and past their best shrubs, and a metal arch hidden by a Banksia rose. The staging and irrigation were installed, plants put back, and a small pond in a corner for the mini water lilies and mini lotus, all now looking much happier.

Clive continues on with the chemotherapy (a new regime, thankfully with fewer side effects), and apart from managing to nearly chop the end off his right index finger with the door of a gun safe while he was moving it prior to sale, an ambulance trip to emergency and subsequent plastic surgery, considering all things he says he feels very good. We have joined the local Orchid Club, which recently had a show, we struggled to put anything in, but out of five entries there were two firsts and three seconds, it was an excellent show in a very small venue but the standard was excellent with a wide variety of species and hybrids on display. The new property is very quiet, and we still have an open view of hills and trees, so we are not surrounded by colorbond fencing, but a very spectacular low hedge of rose hybrid Crepuscule on two sides of the boundary of our corner block. We are also fortunate in having very nice neighbours, so we are settling in well, and as it is our turn we are preparing for the first Christmas in our new home.



Udai with his and Dr. Sarat Mishra's book on Indian Orchids

Udai Pradhan, News from the Himalayas: Dear Friends old and new, warmest greetings for a wonderful New Year to each one of you from the Himalayas! Robin Sharma a well-known Canadian writer says: *"Life is such a fragile thing. It is a priceless treasure that we are given to guard and make use of to the best of our ability. That it will not come again is what makes it so sacred."* ('Daily Inspiration'). The depth of this simple yet powerful message hits me hard even as I feel the turmoil and panic that rages through our Planet with so many horrendous environmental upheavals! And yet even through the unpleasant, our world still awakens with unbeatable sunrise and sunset each day bringing new hope, joy and life to one and all! Nature is doing her share, without fail every second and yet the question arises as to what we humans, as the most intelligent species, are actually contributing towards the welfare of all beings and the planet.

Some years ago I had been invited as one of the keynote speakers of Indian Subcontinent of the IUCN/SSC organised by the Orchid Society of India (TOSI), IUCN and others, at the Govind Ballabh Pant Institute of Himalayan Environment and Development (GBPIHED), Uttarkand, India. Many Orchid enthusiasts, students and researchers from several Universities were attending the meet so I took the opportunity to speak to them about my curiosity in “Sea Orchids”. The sea covers three quarters of the Earth’s surface. A prolific and highly adaptable family like the Orchidaceae should have its representatives or its progenitors in the sea too! Similarly, the questions as to why Orchids and for that matter all living plants cannot be dated back by a simple method haunts me! With technology having taken such enormous strides forward why can’t we search for orchids in the sea? Why can’t I know the age of my favourite Orchid genus/species? All these are fertile areas for finer research which I truly hope the generations will venture into! Who knows that the many species yet unknown or are considered ‘not so beautiful’ or insignificant like the Himalayan Jewel Orchids could provide mankind with answers to biological riddles that we are unable to comprehend or address today?

In 2007, biologists of Harvard University in the U.S.A. identified an ancient fossilised remain of a bee species *Proplebeia dominicana* embedded in amber with a pollinarium of *Meliorchis caribea* (subtribe Goodyerinae) sticking to its back. The assumption that Orchids were 65 million years and they were as old as the dinosaurs got a boost after this direct evidence of fossil record. With premier institutes like Birbal Shani Institute of Palaeobotany and rich fossil discoveries in the country and elsewhere it is time to find out if some more information can be gathered in this area. We have to look for more such instances and evidences. Seeds of Orchids like *Galeola* are hard and comparatively larger than any other Orchid genus and easy to identify. If there can be records of bananas, you will have to become Orchid sleuths and enter the macro and micro world of fossils! Vegetarian dinos may have eaten mega-*Galeolas* or *Gramatophyllums* for lunch and any evidence left behind could be a most remarkable find in the Orchid World! Achrophyllous Orchids like *Galeola falconeri* have fired my imagination – they appear simple, are difficult to locate for studies, and their cultivation still remains a challenge to Orchid scientists and growers all over the world. If an Orchid survived with the Dinosaurs, these must be the ones! They live underground and have reduced stems which produces the inflorescence when it feels like or when it decides the conditions are right to flower and perpetuate. The large inflorescence can be as tall as 210-250cm, emitting Vanilla like fragrance.

In the year 2001, while studying *Galeola falconeri* in my hometown Kalimpong, I noticed that it had developed a novel method of dispersing seeds. There must be some wasp-like insect that lays its eggs inside the young fruit by injecting the eggs into the fruits. The larva hatches and grows within, eating some portion of the embryos and then pupates inside. At the time of maturity of the pods the pupa appears to form into an adult and bore a round hole in the inner parts of the seed capsule which it has eaten up earlier. While emerging out it causes the seeds to slide out and get dispersed by wind using their well formed wings. The seeds are literally stacked in layers inside the pods making it easy to “slip out or seedslide” through the hole from where the adult insect emerges. The insect must have formed this association to avoid its young being detected by predators till it reaches an adult stage. The seed pods dehisce naturally through lateral slits which does not really permit the seeds to emerge out properly. It would be truly interesting to find which species of insect this is and if it comes back to pollinate *G. falconeri*!

In the Himalayan foothills of Darjeeling, we have a truly captivating species *Diplomeris hirsuta* commonly known as the Snow Orchid which may soon become history with the Teesta hydro electric Dam project just adjacent to the habitat. Intensive studies and re-

location to similar habitats is of prime importance. We know very little about the ecology, medicinal, aesthetic and evolutionary significance of this very unique species. Close comprehensive studies of this entity in its habitat combined with DNA studies could throw so much light on the evolution and relationship with other Orchid species. There are many facets of Orchids that are not evident in our daily lives beyond the aesthetics but it is a family that is full of wonders and surprises. Fertile areas of research exist in making epigenetic studies, pollination biology, medical research, migration and comprehensive DNA studies that can mesh and complement the results now percolating from around the world would be very worthwhile area to pursue.

When my two volumes of *Indian Orchids* were published in the year 1976 and 1979, there was an increasing popularity but lack of knowledge in the subject matter. There had been a need for a comprehensive book on its identification and culture for serious scientists and hobby growers the world over. The volumes thus helped bring together 825 species and 137 genera with its scientific and cultural notes which further encouraged new Orchid articles, monographs and culture between 1970 until about five decades. Initially during this time and up to 2004, Dr Sarat Misra, (a well known orchidologist of India working for the past five decades on the systematic and conservation biology of Indian orchids) had been studying *Orchids of Orissa* describing 130 species in 48 genera. After *Orchids of Orissa* he felt the vastness of the Family Orchidaceae in India. In 2007, he published *Orchids of India – a Glimpse* – which described 185 genera and 1331 species of Indian Orchids. In the next 12 years *Orchids of India – a Glimpse* metamorphosed to a remarkable *Orchids of India - a Handbook* that brought together 1430 species, 8 subspecies and 46 varieties in 190 genera! The 50 plus years added 580 species and 53 genera between my books and Sarat's - an astounding number indeed! Thus I feel the best is yet to come in Orchid research and I hope with nations rich in orchid treasures in our midst we can all join hands to study, save and pass this knowledge and natural heritage on to the next generation while also making it a commercial possibility for the hybridisers, breeders and growers!

Over the past 50 years, my hybrid register shows a record of a few thousand crosses of Orchids that I created out of which only 60 have been registered with the International Registrar so far due to several political setbacks and health issues! Nevertheless, it's been delightful contributing to the record of hybrids each time they have bloomed for me! This year I had the privilege of registering five new hybrids out of which two were *Paphiopedilum* hybrids, the details supplied by the Royal Horticultural Society are as follows:

NAME	PARENTAGE	REGISTERED BY
<i>Paphiopedilum</i> Doctor Kamaljit Bawa	<i>Paph.</i> Sukhadru x <i>Paph.</i> (Cyp.) Goultenianum	Himalayan Orch. (U.C. Pradhan)
<i>Paphiopedilum</i> Richard and Wiena Ward	<i>Paph.</i> Henrietta Fujiwara x <i>Paph. hirsutissimum</i>	Himalayan Orch. (U.C. Pradhan)

The hybrid between *Paphiopedilum* Sukhadru x *Paphiopedilum* (Cyp.) Goultenianum was created on 21/03/2009 and the first flowering occurred on 24 /3/ 2019. It took almost 10 years to see it bloom but it was worth the wait! I took the opportunity to honor Dr. Kamaljit Bawa with this particular hybrid! Dr. Bawa, a frequent visitor to the Himalayas as well as a good friend, is a Distinguished Professor of Biology at the University of Massachusetts, Boston, and the Founder-President of the Bangalore-based Ashoka Trust for Research in Ecology and the Environment (ATREE) that has been ranked among the world's top 20



Paphiopedilum Doctor Kamaljit Bawa



Paphiopedilum Richard and Wiena Ward

environment think tanks. He has published more than 200 scientific papers and 11 authored or edited books and monographs. The second hybrid on my list, *Paphiopedilum* Richard and Wiena Ward was derived by crossing *Paph. Henrietta* Fujiwara x *Paph. hirsutissimum*. The cross that was made on 27/04/2012 flowered for the first time on 27/05/2019 and I decided to name it after Richard and Wiena, our very dear friends. Richard Ward, as most of us already know, is also a fellow Kewite, past Editor and member of the Kew Guild and Past President of the Rotary Club of Kew Gardens. Richard and Wiena were also Hemlata's (my daughter) local guardians and had hosted her while she was completing a botanical art course at the Kew Gardens.

Meanwhile, friends, acquaintances and families from the world over keep visiting us and there is always a rich exchange of knowledge and experiences, especially in the field of plants and the natural world. On the 15th/16th of April 2019 it was an honour for me and my family to welcome Dr. Kiat W. Tan the founding CEO of Gardens by the Bay, Singapore and his predecessor Dr. Felix Loh, Chief Executive Officer, Lee Xiaoyi and Andrea Kee to our nursery and to Hemlata's Natural History Art

school. This was his second visit to Kalimpong in order to observe and study the climatic zones in the Himalayas and to see if this could be replicated in the new greenhouses at the

Gardens by the Bay, Singapore. The Garden brings in more than 40 million visitors today. Dr. Tan was also influential in laying the groundwork for the Singapore Botanic Gardens which later became a Unesco World Heritage Site.

Handpainted terracotta pots by the students based on their original sketches and drawings of local plants



In the field of documenting Indian Orchids, Hemlata has been doing exemplary work. She has not only been depicting and documenting the local orchids and other plants but has also been training, guiding and encouraging grass root students in the field of botanical art (and natural history art) at her Natural History Art School in Kalimpong. A couple of the students are completing their internships with her presently and have also joined hands in her conservation projects locally. Meanwhile, new tutors, Mrs. Alyen Foning and Mr. Girish Arora, both ex-students of the prestigious National Institute of Design, (NID) Ahmedabad, India have joined her as guest faculties since May 2019. They are helping Hemlata develop the various art departments at the school while conducting design and sustainability oriented classes for the students, taking their plant (and natural history) documentation to the next level of creativity. It has been an amazing and creative year where we experienced their scientific illustrations transform into beautiful paintings, textile

designs, jewelry and product designs! This is also helping them to slowly pave their way into conservation and sustainability. When Hemlata first began the school, it was with a desire to help provide holistic education and training to children at the grass roots, while helping to promote artistic talents in the mentioned field. It was also an important way to preserve, maintain, develop, encourage and improve traditional skills and approaches while inculcating in them an awareness and concern for the Earth's environment, its flora and fauna, other inhabitants and natural objects and constantly seeking to interact and promote ideas that would assist in the long term conservation of the world's natural heritage. Moreover, it would also help them bring livelihood and sustenance in the future. Today, Hemlata's dream is materialising slowly but surely as more students and tutors join hands in her art and conservation ventures!

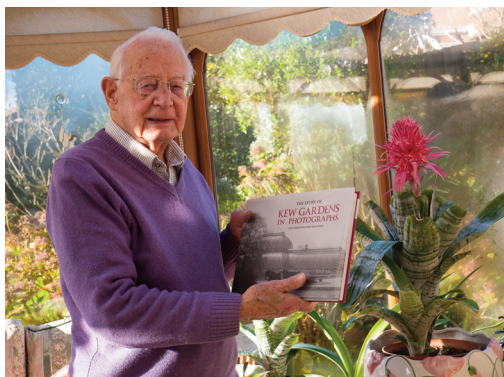


Dr. Kiat Tan (left) on a field trip with Uday on the outskirts of Kalimpong

As more and more plants and animals disappear due to our demanding population and ambitious projects with large scale damage to our environment, there is much to be done in the future in studying, documenting, rehabilitating and conserving fragile habitats. It is not as groups but as individuals that you can first begin the change that you so desire to see in the world! We will begin to truly thrive when we start becoming conscious of the web of life and work from within this consciousness. While we have reached such a level of wonderful technologies, we must not forget that life is also about touching the deepest core of the human heart and releasing the music of the Universe. If you are able to do that through your writings, music, art or any field of human endeavour – to touch and change the hearts and lives of the multitudes in a way that will serve the purpose of a happier and healthier world – you have indeed truly lived! I leave you with an inspiring thought – *“It is the action, not the fruit of the action, that is important. You have to do the right thing. It may not be in your power, may not be in your time, that there will be any fruit. But that does not mean you stop doing the right thing...”* (Mohandas Karamchand Gandhi).

Tom Seager: Tom entered Kew in 1951 and his studies were broken by military service for a period of two years, during which time he served with the Royal Warwickshire Regiment in Korea. On completing military service, he returned to Kew in 1954 to complete his studies. Tom's first appointment was with Stoke-on-Trent as Technical Assistant where he stayed for four years. This was followed by a move to Newcastle upon Tyne as Deputy Director of Parks. After two years he took up the position of Director of Parks with Oldham Borough Council and was later appointed as Chief Amenities and Recreation Officer.

Following early retirement in 1985 to Teignmouth, he interested himself in being a Judge for the South West Region of Britain in Bloom Committee. He also joined the local hospital League of Friends and was a member for thirty



years, during which time he served as Chair for a number of years. Tom enjoys good health, pottering in his garden, meeting with retired Rotarians and visiting National Trust gardens. He celebrated his milestone 90th birthday in November 2019 with his son and daughter, family and friends. On this occasion Tom was pleased to be presented with the Kew in Photographs book which was signed by the Director of Horticulture at Kew and a photograph from the archives of those who studied with him.

Alan Titchmarsh (1969) MBE, RHS Victoria Medal of Honour, Vice President of the RHS and founding RHS Ambassador since 2013, opened the new Welcome Building at Wisley on June 10th followed by a ceremonial tree planting. Alan then opened Harlow Carr's Flower Show on 21st June as the garden celebrated 70 years.

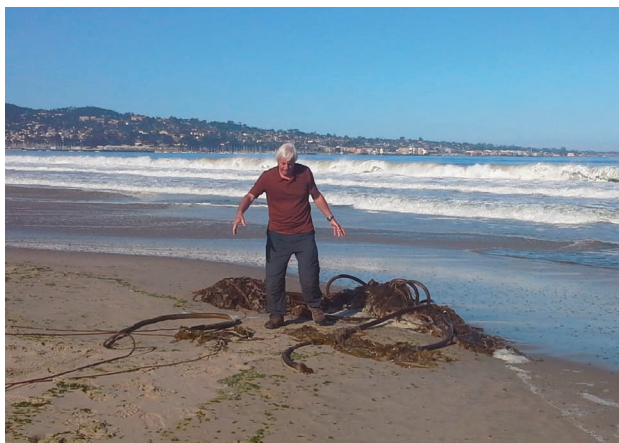
Sarah Wain (1980): was awarded the RHS Associate of Honour for her distinguished service to horticulture on 8th April in London by Sir Nicholas Bacon RHS President. Sarah, who was Gardens Supervisor, and Jim Buckland Gardens Manager at West Dean Gardens, both retired in March after 28 years of restoration and redevelopment of this 36.4 hectare (90 acre) site. A champion for the next generation of gardeners, Sarah's work will be honoured by a new scholarship being set up by West Dean Gardens. The year long Trainee Horticulturist post will include practical experience at West Dean, formal training and Associate Membership of the Professional Gardeners Guild.

Richard Ward: It was good to meet with many Kewites at various functions, or at our flat in Kew, during the year. 2019 was as busy as ever, with mostly voluntary commitments. I completed my year as President of the Rotary Club of Kew Gardens at the end of June after much fund-raising and enjoyment – roasting chestnuts, selling bedding plants, running Pimm's bars etc.; I supported Editor Sparkle at Guild Committee meetings; judged the Richmond Borough in Bloom pubs; sat on Kew Horticultural Society main and Show Committee; the Borough of Richmond Allotment Group; (there are 24 allotment sites in the Borough, with 2400 tenants); and greatly enjoy growing a wide variety of veg. on my allotment off the Mortlake Road in Kew. I usually average 1 - 2 days a week doing varied paid garden work from consultancy to hedge clipping, and enjoying every minute giving of the skills that I learned at Kew 59 years ago. Now, at 80, it's time to slow down, but remember – 'the old ones are the best!'



John Whitehead (1969): Man first landed on the moon in 1969. It was one small step for the new Kew students in 1969 and one giant leap for 2019, commemorating 50 years. Fellow student Jim Emerton, alerted me of our 50 year Kewite Golden anniversary. We are now all in our 70s and our leader, Leo Pemberton, is amazingly 90 years old. Jim has attained ego Mensa madness including cosmic poetry, a renowned authority on racing pigeons and during his student days at Kew, Jim shared lodgings with Alan Titchmarsh. Alan, the multi-talented green Kewman has become a famous household celebratorial Television personality. Recently in a pet shop in Caernarfon, I saw Alan's iconic gardener's grin, promoting his broad smile advertising the sale of peanut bird feeders! I achieved a modicum of stardom in the January issue of the RHS Garden magazine, when the encyclopedic plantsman Roy Lancaster, kindly wrote an article featuring my botanical peregrinations, visiting all the countries of the world and elaborated on the many post cards with botanical cartoons which I sent to Roy and Sue from far off lands.

This year Brenda and I spent half a year abroad tree hunting, afforded by stretching our savings, pension and income from Arboricultural work, designing Tree Trail Guides. The first four months included meticulous planning to turn a world cruise into tree hunting sorties against the clock at numerous ports thus avoiding the dilemma of being stranded, by missing the ship's departure times. We were pleased to see baobab trees in Barbados, Vietnam, Singapore and Oman. A lovely surprise was to meet a Kewman, Graham Pattison and his wife Linda onboard. Graham was the guest lecturer for Mexican and tropical plants relating to the exciting different ports of call.



John Whitehead and stranded giant kelp

During the summer, we spent a week in the land of the blue poppy in the high mountains of Sichuan where we botanised for iconic alpine plants on the Chola Shan pass and at over 4,000 metres on Balang Shan, we found the fascinating *Saussurea*, which the locals call “Jellyfish Snow Rabbit”. At lower altitudes we were lucky to see the amazing Giant Lily and our Wolong Guide had worldwide web exposure when in March, he was the first person ever to record seeing a completely white Giant Panda. In the Min mountains, we retraced a historic journey to see our man from Kew, Tony Kirkham's favourite Ernest Wilson tree, the impressive giant *Meliosma*, in the northern village of Yeh-tang.



John Whitehead on Balang Shan and “Jellyfish Snow Rabbit”

We spent an amazing month travelling across the USA in pursuit of the world's biggest and oldest plants. Starting near the Atlantic Ocean with the oldest tree in New York, a giant Tulip tree in the wildwoods at Alley Pond Park, then across the USA and ended with finding a stranded giant Kelp on the shores of the Pacific Ocean near Monterey. Our three-week journey was on a bus tour visiting National Parks. We then hired a car for a week travelling through deserts and mountains of



John and Brenda with local villagers at the giant *Meliosma* tree at Yeh-tang

California, from Los Angeles to San Francisco. Our unbelievable experience visiting formidable gigantic trees and ancient clonal plants are beyond words and must be seen to be believed.

Our report concludes with the following ancient plants that we visited in 2019 along with their estimated age: In Pennsylvania, the “Box Huckleberry” *Gaylussacia brachycera* is up to 13,000 years old: In Utah at the Fish Lake National Forest the “Trembling Giant” or “Pando” *Populus tremuloides*, is featured in the Guinness Book of Records, recording the massive clonal tree as the nearly the size of the Vatican City and in October the fantastic golden fall foliage contrasts vividly with the chalky white bark of thousands of trunks and a root systems with a clonal age, staggeringly estimated at 80,000 years: West of Los Angeles, is the intriguing Palmer’s Oak aged at 13,000 years: In the Mojave Desert, the King Clone Creosote Bush is around 12,000 years old: The ages of Bristlecone Pines are up to 5,000 years old, surviving at high altitudes in the White Mountains: In the Sierra Nevada the giant redwood, General Sherman estimated over 2,200 years, is the ultimate record holder for the largest single living thing in the world.

Obituaries

Our thanks to Graham Burgess for his assistance with obituaries - Ed

Andrew Barnes **26th October 1943 - 13th June 2019**

Andrew Barnes was born and raised in Dorset and went to school in Wimborne. After leaving school, Andrew served his gardening apprenticeship with Poole Borough Council working in the Parks Department and Upton House. Upon completion of his apprenticeship he was awarded a place in 1963 on the first three year course at the Royal Botanic Gardens Kew where he gained invaluable experience and made lifelong friends. In 1966 Andrew spent one year at the Institute of Parks and Recreation administration gaining his Diploma.



In 1968 Andrew married Jeannette, a laboratory technician at the Commonwealth Mycological Institute; they had been introduced by her work colleague Joan Woodhams (who married John in 1966). After their wedding, Andrew took up his first post with Kent County Council working from Maidstone as Countryside Assistant. One of his first responsibilities was dealing with Dutch Elm disease which was threatening old Elm trees in the area.

Andrew’s first daughter, Lisa was born in 1969 and shortly afterwards he won a place on a Rotary Exchange programme studying recreation and horticulture in the USA. In 1971, Pippa was born and the family moved to Hertfordshire for Andrew to take his place as Landscape Officer with the County Council. In 1974, Teona was born and nine weeks later Andrew moved to Cherwell District Council where he served as Countryside Officer until 1986 when he decided to move from local government to become self employed. The family was complete in 1986 when Paul was born and village life became increasingly important with involvement in the primary school, playgroup, Oxfordshire Junior Tennis, swimming, church and in particular organising work parties for the Lakes in Adderbury - developing them as nature reserve when they were taken over by the Parish council.

In 2001 Andrew fought and conquered bowel cancer after surgery and chemotherapy and went on to forge a successful partnership with Jeremy Sacha, forming Sacha Barnes Landscape Consultancy. In 2009, Andrew was diagnosed with Parkinson's Disease and he worked less but still continued to advise and joined working parties at the Lakes. Sadly, in 2018 motor neurone disease was diagnosed but Andrew continued his voluntary work in Adderbury. Despite the MND, Andrew was always positive, cheerful, accepting and inspirational until 13th June 2019 when he could fight no longer and with his whole family by his side he was able to rest at last. The church was filled to capacity for his thanksgiving service, he was truly a good man whose life was dedicated to horticulture and his family. He was the 'Smiley Treeman of Adderbury' who was so proud to be able to say he had trained at Kew. *Our thanks and condolences to Jeannette.*

A Tribute to Reginald Ian Beyer
11th September 1932 – 22nd March 2019
Former Deputy Curator at the Royal Botanic Gardens, Kew



© Peter Beyer

Reginald Ian Beyer (known to most friends and colleagues as Ian), Deputy Curator at the Royal Botanic Gardens Kew from 1972 to 1992 made a significant and lasting impact on the long-term improvement of the gardens during his tenure. His contribution in overseeing the development of major projects at Kew, adding to its plant collection and in positively influencing the wider worlds of botany and horticulture is recognised and applauded by colleagues who worked alongside him.

Ian's first taste of Kew was in 1955 when he spent two years there as a student gardener. He returned in 1959 after spending two years getting practical commercial nursery experience including at the T. Elliot Nursery in Stow-on-the-Wold. Then, in early 1960 he became a foreman gardener working in the alpine department. On October 1st 1968 he was promoted to Assistant Curator for the North Arboretum and Machinery Sections (later Services Section) – the same day as Charles Erskine was similarly promoted. Ian soon set up a machinery and maintenance workshop, tree care gang, horticultural services section and a skip system for rubbish collection. After his appointment to Deputy Curator in 1972, he got his teeth into many projects and interests – including plant collecting.

Because of his practical capabilities of getting 'stuff' done at Kew it would be easy to forget that Ian was a very keen and knowledgeable plantsman and extremely conscious of the ever-growing need at that time for plant conservation and the protection of endangered species. To this end, he played a major part in organising the first international conference on Plant Conservation held at Kew in 1975 entitled: "The Conservation of Threatened Plants". His key travels abroad for Kew included an expedition to Poland in 1976 with Jim Keesing and Tony Schilling, visiting various botanic gardens and plant collecting in the Tatra mountain range.

In 1978 he travelled to Mexico and advised the newly established Clavijero Botanical Garden in Xalapa, Veracruz on the garden's layout and a system of databases, records and the labelling of the living plant collections there. He also found time to do some plant collecting and botanising in the region. His report to the fledgling establishment was very

detailed. Peter Thurman, a Kew student at the time working in the Planning Department under Bill Jennison remembers drawing details of boundary fencing and “kissing gates”! In 1981, Graham Pattison, also from Kew, became the curator and developed a method of mapping the collections and established a small nursery there.

Perhaps Ian Beyer’s most significant expedition abroad was to South Korea [Code BECX] with Charles Erskine and Jill Cowley in 1982. Notable specimens found included *Sorbus ulleungensis* from the island of Ullung-Do in the East Sea and *Platycarya strobilacea* from the mainland. Other species collected from South Korea which survive in the Arboretum include numerous *Acers*, *Carpinus*, *Celtis jessoensis*, *Camellia japonica*, *Magnolia kobus* and *M. sieboldii*, *Quercus variabilis* and *Q. acutissima* and *Sorbus alnifolia*. Tony Kirkham, present Head of Arboretum, Gardens & Horticulture Services at Kew adds that this year, seeds of *Ulmus parviflora* [BECX 256] from that expedition that had been kept in the cold store have been re-sown and have germinated well. Tony also remembers fondly that Ian Beyer gave him his first opportunity to set off plant collecting: “*Ian started my fieldwork campaign by sending me to Chile in 1985 and then to follow in his footsteps in South Korea to mop up after him in 1989 - post Great Storm*”.

1987 was a significant year for Ian. The completion of perhaps his most high-profile project was marked when Princess Diana opened the new Princess of Wales Conservatory that summer, which, under his painstaking guidance had taken over 5 years to complete. In October that year, Ian’s organisational skills came to the fore when he managed the clear-up operation after the Great Storm. Ian’s many achievements were recognised that year with the award of the Kew Medal. Ian was also an Associate of Honour (RHS) and a Fellow of the Institute of Horticulture. Other notable projects under his leadership included the renovations of the Temperate House, Palm House and Water Lily House, the build of the Sir Joseph Banks Building and the construction of Aiton House. For many years, Ian represented Kew on various management committees at other institutions including at The Chelsea Physic Garden. He was also a member of the Forestry Commission Advisory Committee that helped administer the development of Westonbirt Arboretum and Bedgebury Pinetum. He was also the author of many annual and always interesting “Garden Reports” for the Kew Journal.

Stewart Henchie, former Assistant Curator of the Services Section, remembers Ian’s enthusiasm and drive: “*He was the only manager who really understood what was required and we had many challenging conversations about solutions together. I greatly valued his mentoring and help. He didn’t mess about and was always plain talking and to the point – a fair but no nonsense approach to getting things done. Many of the major projects like the landscaping of the Princess of Wales Conservatory would not have happened on time but for his organisation and drive. After the ‘Great Storm’ hurricane in 1987 in October he and I interviewed applicants in 20 minute or less interview blocks over three days to get in enough extra staff to clear the gardens up after the storm - an experience not to be forgotten!*”

Once retired and living in Suffolk, Ian served as a trustee at The Marks Hall Gardens and Arboretum in Essex from 1993 to 2003 – following a long line of esteemed Kewites including Sir George Taylor (who served from 1972 to 1979), Professor Pat Brenan (‘79 to ‘85) and Arthur Bell (‘91 to ‘01). When Ian retired as a trustee the Kew link was continued by Peter Thurman and since 2008 it has been via Michael Lear [who is now also a Kew trustee]. Sir Gillian Prance was and Professor Stephen Hopper, Richard Deverell and Peter Thurman are now patrons.

Ian was born in Hayes, near Sidcup, in Kent and started work aged 16 at a nursery in the

county before completing his National Service with the RAF on the Isle of Sylt in northern Germany. He met his wife Agnes, who was known by everyone as Margaret, when they stayed in the same lodgings at Kew in his early years there. They married in 1961 and settled in a rented house at Kew Gardens. They were married for 52 years and had two children, Peter and Jennie. After his retirement from Kew, they moved to Suffolk. Ian moved to Surrey after Margaret's death to be nearer to his family, including his grandsons James, George and Harry, for the last six years of his life. His son Peter said of his father: *"He loved his work at Kew and all the opportunities it afforded him. There can be little doubt that he could be proud of what he achieved in his life and most especially during his long career at Kew."*

Compiled from contributions by Peter Beyer, Charles Erskine, Hans Fliegner, Stewart Henchie, Tony Kirkham, Peter Thurman and the Marks Hall Gardens and Arboretum. © Peter Thurman

Esme Kathleen McCulloch **12th January 1917 – 12th March 2019**

Esme McCulloch (nee Thompson) was a proud Life Member of the Kew Guild. Kew Gardens was always close to her heart. She found the gardens inspiring, the science fascinating and the people both interesting and memorable.

When Esme left Ealing Girls Grammar School in 1935 she became a civil servant with the Ministry of Agriculture in Whitehall. She found no joy in Bull Licences or Tithe Rentcharge Redemptions, however, and she was delighted to discover that Kew Gardens was under the auspices of the Ministry. She was transferred in 1937. She became Secretary to Dr John Hutchinson, the Keeper of the Museums, and had an office in Cambridge Cottage, overlooking Kew Green. They shared the first floor with Dr F.N. Howes (who loved bees), Dr Ronald Melville, and diminutive Mrs Collins who mounted Herbarium specimens with meticulous care. Through these happy years, Esme worked for most of the senior staff, including the Curator, John Coutts, his Treasurer, Mr Dunk, and Dr Charles Metcalfe, Keeper of the tiny Jodrell Laboratory. At times she relieved in the Director's office for Sir Arthur Hill (whose tragic death while horse riding in Richmond Park shocked everyone), and his successor Sir Geoffrey Evans. Occasionally she helped Arthur Cotton in the Herbarium, where she met her life-long friend, Mollie Kierans.

Her work varied from seeking information from the Natural History Museum, to typing



up contributions to the *Genera Plantarum*. She also typed up Dr John Hutchinson's notes on his two extended collecting trips to Southern Africa for his book *'A Botanist in Southern Africa'* (1946). After the War began she was sent back to Whitehall. She spent many nights in the Ministry's basement during the Blitz, and the roof of her home in Hanwell was blown off. But Dr Hutchinson requested her return to Kew, where all was focussed on the War effort. Boy Scouts raided the hedgerows to collect rosehips for Vitamin C jam (Dr Melville's idea), and Esme and Mollie often did 'fire-watch' duty in the Museums to the terrifying sounds of the V1 and V2 bombs. Between 1941-43, Esme also served as a part-time Red Cross nurse at the King Edward Memorial Hospital in Ealing. Her skills were

admired by both the medical staff and the injured servicemen.

Esme spent much of her courtship with Gerald McCulloch, a young mining engineer, in Kew Gardens. They married in 1943 and after the War they migrated to South Africa where Gerald managed diamond mines. They had four sons and three daughters. After the glorious gardens of England, the Kalahari Desert came as a shock. It took time for her to adjust, but she did get to see living specimens of the dried flowers she had admired at Kew. In the 1960s, the family moved to India for three years, and then to Australia where they are all now firmly entrenched.

Esme had an eye for detail, a facility for words and a great capacity for hard work. Her finest gift however, was a big, loving heart. She became the matriarch of a very large family. When she retired as a school secretary in Newcastle, NSW, in 1982, she was replaced by three people. She was a keen gardener in her retirement, and got her first taste of computers at the age of 94, when she acquired her first iPad. She found it a lifeline to her family and to the world as she became increasingly infirm, but her mind was always sharp. Esme died at 102, the same age her mother reached. The three most important things to her were her family, her faith and her flora. All three were present in great abundance at her funeral, which was attended by 29 priests and deacons. It was a remarkable celebration of a remarkable life. - *Peter McCulloch*.

Hans Overeynder **5th May 1932 - 5th July 2019**

Fellow students and colleagues will remember Hans for his robust good humour and enthusiasm, whether it was work or sport; also for his hearty laugh – you always knew when Hans was around! But as a native of Rotterdam few will have heard of his boyhood under Nazi occupation, of which he rarely spoke, and which involved near starvation in the winter of 1944-45.

He came to Kew in 1956 having used his one-year Visa to spend the time at Fernhurst, ICI's research and experimental station for Plant Protection Ltd. a post he landed through the firm's contacts in Rotterdam. He had already attended the Dutch National horticultural college in Boskoop and done his National Service in the army, during which he helped rescue civilians during the disastrous floods of 1953 in southern Holland, which claimed more than 2500 lives. On his first day at Plant Protection he met his future wife, Ann, who no doubt helped teach him English, amongst other things! Back in England following his obligatory 12 months return to Holland, after his visa expired, he was accepted for the two-year Kew Certificate course, as it was then.

We first met at 13, The Avenue, Kew, under Mrs Harris' firm but fair regime, as chatelaine. A big house, it accommodated several students reasonably comfortably. We were lucky and it was conveniently near to Ann's family house. They married after Kew in 1958, like Lyn and I. As a student gardener Hans threw himself enthusiastically into everything and succeeded admirably on a broad front, revealing himself as an exceptionally good, practical horticulturist.

After a year in charge of the gardens at Paignton Zoo, he was "head hunted" by Kew for Sherrard's to take on management of their Donnington nursery. Then in 1967 Hans had the opportunity to run his own show in partnership with George Norrie, when they set up Fairfield Nurseries near Newbury as a "Garden Centre", a novel concept at that time. Converting a market garden and piggeries business was a Herculean task, but with George's financial backing and Hans' horticultural know-how and network, they

established a successful business and became a significant local employer. Again, he threw himself enthusiastically into local activities through the Round Table, helping to set up the Newbury Carnival, the (then) Crafty Raft Race and in 1970 Newbury's first and only large-scale, open-air Rock Concert. As a keen sportsman he played for Newbury Hockey Club and Chieveley Tennis Club, where he trained local youngsters. He was an ardent football fan, supporting Southampton (sad man!) and Rotterdam's Sparta (similar fortunes). To his credit he failed the "Tebbit Test" by repeatedly supporting the Dutch national side, even against England.

On retirement Hans and Ann bought a house locally and he became Chairman of the Hermitage Parish Council, a reader for Newbury Weekly News talking newspaper Kennet Cassette for the sight-impaired; he also set up Hermitage 'Old Boys' lunch club. Ann's death came tragically early but the irrepressible Hans eventually found Joyce, a widow, with whom he enjoyed some mutually happy final years. Moving in with Joyce, extending the house and laying out the garden gave him a new interest and outlet for his unquenchable energy and enthusiasm into his 80s. He leaves his children, Mariette, Rowan and Wim and his grandchildren Martha, Grace, Cameron, Elsbeth, Freddie and Callum; and his many friends. He was a predictably resilient, always kind and a transparently honourable man, who will be remembered with great affection. - *John Sales*

Trevor Savage **27th December 1948 - 23rd August 2019**

Trevor was born in Burnley, Lancashire on 27th December 1948. He was the second of four children. He had an older brother born in the January of the same year and a younger sister and brother. On leaving school he took an apprenticeship at the local hospital working in the gardens and glasshouses which sparked his interest in plants and horticulture. He went to Burnley Municipal College where he gained his first qualifications in Horticulture.

He went onto study at the Welsh School of Horticulture in North Wales. From there he gained a place at the Royal Botanic Gardens at Kew from 1969 to 1972 where he was in the same year as someone you might have heard of, Alan Titchmarsh. Trevor is mentioned in Alan's autobiography when they spent three weeks on an "exchange visit" to an outpost of the Munich Botanic Garden at Schachen, which is half way up a mountain in Bavaria. Trevor very much enjoyed his time at Kew. He was awarded the Matilda Smith Award for Best Practical Student Overall and The Dummer Memorial Prize for the Best Plant Portfolio Project when he graduated. He went on to spend a year Writtle College, Chelmsford where he obtained the National Diploma in Horticulture in 1975. He went to work at Coleg Howell Harris in Brecon as a technician in the Horticulture Department in 1973. There he met his future wife, Elizabeth and they were married in 1975 in Ystradgynlais, Elizabeth's home village in South Wales. From there they moved to Bath where Trevor was employed at the University of Bath as a technician in the Horticulture Department. Their daughter, Sarah, was born in 1977.



From Bath, Trevor moved to Hull where he was employed as Deputy Gardens and Grounds Manager at the University of Hull. He took over the position of Gardens and Grounds Manager when the current holder retired. Gareth, his son was born at Beverley in 1980. Trevor worked at the University for over 30 years where he was well liked and respected. His interest in plants never waned, he knew all the Latin names and he collected rare specimens of plants and trees from across the country. This could involve carefully researched trips to collect the relevant specimens from nurseries or taking cuttings of plants he was interested in wherever he could find them, no plant was safe!

He was very much a family man and enjoyed regular family days out to the coast and North York Moors as the children were growing up, as well as the annual family holiday to Pembrokeshire. He and Elizabeth went on the trip of a lifetime to Peru and Machu Picchu to celebrate their respective 60th birthdays. Trevor always had a passion for trains, steam trains rather than their more modern counterparts. Through this he became interested in the work of Terence Cuneo and joined the Cuneo Society. Following his retirement, he became the Editor for the Guild of Railway Artists Journal for a number of years and then the Cuneo Society Journal before ill health meant he could no longer continue with this. Trevor was someone people always went to when they wanted advice about plants and their garden. He was always happy pottering around outside and he spent as much time as he could in the garden following his diagnosis with prostate cancer in May 2016, until he became too ill to do the actual gardening and acted in a supervisory role. He lost his fight against cancer on 23rd August 2019 and spent his final days in Dove House Hospice in Hull where they took him round their garden in his hospital bed.

We offer our condolences to his family and thank his daughter Sarah and Elizabeth, his wife for the lovely details.

Valentine H. Tynan - 2nd November 2018

In the 2010 Journal Valentine revealed how he was living in a little place in Ireland called Gort, a place where W. B. Yeats wrote the poem *The Wild Swans at Coole*.

Since the age of three he had helped his mother in the garden. In 1980 he won a scholarship to Kew and he said how much he loved his time there where he made lifelong friendships. He widened his skills by studying Commercial Horticulture at Kildalton College, which was a two-year residential course. Kildalton College has been providing horticultural education since 1971 and is the largest land-based college in Ireland. With a total student population of approximately 1200, there is a great mix of young and mature students from all parts of the country and beyond. After graduation he moved to Hamburg in West Germany. Then back to UK to work in various large private gardens. In 1991 he set up his business as a Consultant Gardener offering Advice; Design; Development and Care Services. His business boomed. In 1996 his first mentor, his mother, had a bad accident and the priority became caring for her, she passed away in 2001. Then he did not drive and his clients had to collect him. He was obviously deemed worth it.

In his Will, Valentine left a substantial sum to the Kew Guild which will be known as the Valentine Tynan Fund to benefit future Guild Members.

Valentine was featured in a video series by Galway Hospice, published on their Facebook page. Search on the web: *"I would like to spend my end of life here. Valentine H. Tynan"*.

THE KEW GUILD STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED 31 DECEMBER 2019

		UNRESTRICTED FUNDS	RESTRICTED FUNDS	ENDOWMENT FUNDS	TOTAL 2019	TOTAL 2018
	Note	£	£	£	£	£
INCOME AND ENDOWMENTS FROM:						
Incoming resources from generated funds						
Donations and legacies	2	36,209			36,209	1,572
Income from Investments						
Investment income and deposit interest	3	15,314	7,739		23,053	22,508
Income from charitable activities						
<i>Advancement of horticultural and botanical knowledge</i>						
Events and other membership activities:						
Membership subscriptions		9,664			9,664	9,640
Annual Dinner		3,032	-		3,032	4,632
AGM Soiree		-	-		-	358
Other events and income		1,267	-		1,267	18,110
<i>Encouragement of horticultural and botanical education</i>						
Awards and prizes:						
Donations and legacies	4	-	-		-	-
Total income and endowments		65,486	7,739	-	73,225	56,820
EXPENDITURE ON:						
Expenditure on Charitable activities						
<i>Advancement of horticultural and botanical knowledge</i>						
Events and membership activities:						
Website project		449	-		449	280
Journal of The Kew Guild		5,453	-		5,453	5,005
Annual Dinner		2,954	-		2,954	4,864
AGM Soiree		-	-		-	486
Newsletter		-	-		-	101
Presidents' name bars		150	-		150	-
Presidents' medals		760	-		760	-
Archivist		738	-		738	-
Other events and membership activities		1,127	-		1,127	18,059
<i>Encouragement of horticultural and botanical education</i>						
Award making: Awards						
	5	800	8,897		9,697	8,732
Prizes	5	575	25		600	420
Student fellowship		-	-		-	125
Kew Guild Medal		359	-		359	359
Grants to institutions		3,000	-		3,000	-
Other Expenditure						
Membership database		(2,653)	-		(2,653)	1,495
Administrative costs		6,555	-		6,555	11,823
Other expenditure		-	-		-	-
Total expenditure		20,267	8,922	-	29,189	51,749
Net Income/(Expenditure) before investment gains/(losses)		45,219	(1,183)	-	44,036	5,071
Net gains/(losses) on investments:						
Unrealised movements on investment assets	8	74,745	15,267	23,449	113,461	(18,036)
Net income/(expenditure)		119,964	14,084	23,449	157,497	(12,965)
Transfer between funds		(16)	16	-		-
Net movement in funds for the year						
Reconciliation of funds						
Total funds brought forward as restated	12	519,179	100,645	131,137	750,961	763,926
Total funds carried forward	12	639,127	114,745	154,586	908,458	750,961

THE KEW GUILD BALANCE SHEET AS AT 31 DECEMBER 2019

	Note	2019 £	2018 £
Fixed assets			
Investments	8	747,981	634,520
Current assets			
Stock of Kew Guild medals		4,416	359
Debtors	9	5,545	5,372
Cash at bank and in hand	10	162,765	118,179
Total current assets		<u>172,726</u>	<u>123,910</u>
Liabilities			
Creditors: amounts falling due within one year	11	(12,249)	(7,469)
Net current assets or liabilities		<u>160,477</u>	<u>116,441</u>
Total net assets or liabilities		<u><u>908,458</u></u>	<u><u>750,961</u></u>
The Funds of the Charity:			
Endowment funds	12	154,586	131,137
Restricted funds	12	114,745	100,645
Unrestricted general fund	12	181,679	119,260
Unrestricted designated funds	12	<u>457,448</u>	<u>399,919</u>
Total unrestricted funds		639,127	519,179
Total Charity funds		<u><u>908,458</u></u>	<u><u>750,961</u></u>

The financial statements will be approved by The Trustees on 23 July 2020 following the completion of the independent examination. These summarised accounts may not contain sufficient information to allow for a full understanding of the Guild's financial affairs. For further information the full Annual Report and Financial Statements, including the Independent Examiner's Report, should be consulted. Copies of these can be obtained from Linda Baharier, 1 Castlehill Cottages, Outwood Lane, Bletchingley, Surrey, RH1 4LR.

The accounts for the original Kew Guild charity (306064) and the new Kew Guild CIO charity (1174033) will be provided as separate financial records to the Charity Commission. However, for ease of reference they have been combined together for the Journal.



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